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News Print Price Problem May Shortly be Solved

More Amicable Feeling Which Exists Between Canadian Interests and International Seems to Indicate Joint Action When Situation Warrants Move For Higher Prices — Large News Print Industry May be Established In Newfoundland—Negotiations Said To Be Proceeding Satisfactorily—Hearst Interests Figure In Deal

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 10, 1930.—While there is no definite news in regard to the possibilities of a higher price for news print, the more cheerful feeling which for the past few weeks has characterized the outlook on the part of leaders in the industry still persists. This would seem to indicate that the International Paper Company and the big Canadian producers are now able to speak a common language and to explore in an amicable way the market conditions in preparation for a joint move should developments during the next month or so warrant a move for higher prices. Evidently a reflection of this feeling has reached New York, for despatches are published here to the effect that a price of $60 will be established for the last half of the current year, with a gradually ascending scale thereafter until $75 per ton is reached. This, however, is mere speculation, and does not reflect the opinion here. All that can be said is that events are moving slowly towards a readjustment of the market towards a point where news print manufacture will once more give a reasonable return on investment, and that the best indication at the moment of this movement is a larger spirit of toleration and co-operation among the interests involved.

The Newfoundland Proposal

Readers of this column are already acquainted with the efforts which the Government of Newfoundland are making to establish another news print industry of large size on the Gander River. It is now said that negotiations to this end are proceeding satisfactorily, and that the Hearst interests undoubtedly figure in the deal. In view of the admitted difficulties involved, and of the anxiety of the Newfoundland Government to make a good showing with the electorate, the reports should be received with some reserve. Nevertheless, it is confidently expected that when the Legislature meets, probably in May, the Government will have something to announce in regard to the project, though whether or not this will be in the nature of an agreement with American financial interests to undertake the project is another matter.

Project of Gignatic Nature

The project, as mooted, is of a gigantic nature, involving, as has already intimated, an outlay of some $65,000,000. It involves the granting of large pulpwood areas on the mainland in Labrador, where there are conflicting interests; a large and difficult water power development on the Gander River, which is on the island; and the underwriting by the Newfoundland Government of some $15,000,000 of bonds.

Winthrop M. Crane Elected Vice-President

The election of Winthrop M. Crane, Jr., Dalton, Mass., as a vice-president of the American Paper and Pulp Association is announced by Mr. S. L. Willson, president of the association.

Mr. Crane's election to the vice-presidency is occasioned by the recent resignation of Felix Pagenstecher, Bryant Paper Company, Kalamazoo, Mich. The election took place at a recent meeting of the executive committee of the association.

Mr. Crane is the son of an illustrious paper maker, former Senator W. M. Crane. He comes to the association well versed in the affairs of the industry. At present he is president of Crane & Co., Inc., Dalton, Mass., makers of bank note, parchment and extra fine writing papers. Crane's bank note paper, upon which most paper currency is printed, and Crane's writing paper are well known throughout the paper trade.

After graduating from Yale University, Mr. Crane advanced rapidly not only in business but also in the esteem of his competitors and friends. He is a former president of the Writing Paper Manufacturers Association and at present a member of the Massachusetts State Republican Committee.

New Pulp Mill for Hoquiam Assured

With the voters authorizing a $100,000 bond issue for Hoquiam, Wash., early in March, the proposed pulp mill which was rumored will now in all probability be built adjacent to the Grays Harbor Lumber Company's property, according to statement of C. G. Blagen, manager of the Grays Harbor Lumber Company and a leader in the pulp mill activities. Plans are being started and will be ready in 60 to 90 days, Mr. Blagen intimated.

Although it is known that this pulp company was organized the entire personnel has not been announced. The plans hinged on the water supply which must be brought through connection with the system from Aberdeen's industrial supply. The mill will be a 100-ton plant.

W. C. Hamilton & Sons Not to Merge

A rumor to the effect that W. C. Hamilton & Sons, of Miquon, Pa., is about to merge with another company has apparently been spread quite thoroughly through the paper trade, and this company (W. C. Hamilton & Sons) takes this opportunity to deny that any merger or any change of management is intended, and to say that there is absolutely no foundation for this rumor.

Activities of the Wisconsin Paper Industry

Marathon Carton Division's New Menasha Plant Nears Completion — Interior Being Made Ready for Machinery—Kraft Mills Urge Chemical Pulp Import Duty—Safety Conferences To Be Held at Green Bay and Wisconsin Rapids

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 10, 1930—Kraft paper mills in Wisconsin are urging an import duty of 20 per cent on foreign chemical pulp in order to save them from heavy losses in the future, according to a statement issued by C. C. McLaren, forester of the Tomahawk Kraft Paper Company, Tomahawk, Wis.

It is found that nearly as much sulphite and kraft was imported during 1929 as was manufactured in the United States. Increased production last year also gave the country a ten per cent over supply. The kraft mills averaged 74 per cent of their capacity and the stock in the hands of the mills increased nearly 20 per cent.

This situation has deprived the mills of their profit and it is believed prices will drop even more unless the duty is affixed. Eventual extermination of kraft mills in Wisconsin would result otherwise, Mr. McLaren said.

Marathon Carton Plant Nearly Ready

Most of the work connected with the building of a new factory at the Marathon Paper Mills Company's Carton Division at Menasha, Wis., has been completed. The building is now completely enclosed and under roof and the interior is now being made ready for the receipt of machinery. The carton presses will be moved into the building so the old printing section can be abandoned. The new structure is two story, and of concrete

Big Safety Conferences Planned

Wisconsin will have two big safety conferences this year instead of one. In addition to the annual Fox River Valley Safety Conference, held in the north eastern section of the state, there will also be a Wisconsin River Valley Safety Conference. The former will be held at Green Bay in June, and the latter at Wisconsin Rapids on June 26. About 1,500 persons are expected at Green Bay, and 1,000 at Wisconsin Rapids.

J. J. Plzak, of the Consolidated Water Power and Paper Company, is chairman of arrangements for the Wisconsin Rapids conference, and Franz Rosebush, of the Nekoosa-Edwards Paper Company, is secretary. R. M. Altman, of the Marathon Paper Mills Company, Rothschild, Wis., is chairman of the pulp and paper section of the conference. George Burns, of the National Safety Council, Chicago, was present to assist in making the arrangements. A section will be held this year for nurses, and about one hundred industrial nurses will be present.

Nekoosa-Edwards Logging Service Assured

The Nekoosa-Edwards Paper Company, Nekoosa, Wis., will not be deprived of its logging service over the Babcock-Norway spur of the Chicago, Milwaukee, St. Paul and Pacific Railroad, since recent hearings were decided in the company's favor. The railroad wanted to abandon sixteen miles of its line because it was said to be unprofitable. An investigation was made by the Wisconsin Railroad Commission and the paper company protested that the line was necessary for logging operations. The Interstate Commerce Commission then isuued an order to continue service, perhaps by operating one train a week.

Institute of Paper Chemistry Aided

Another gift of $5,000 has been added to the funds of the Institute of Paper Chemistry at Lawrence College, Appleton, Wis. The donor is a former paper manufacturer who desires that his name be kept secret, according to Dr. Henry Merritt Wriston, president of the college. The institute started its sessions last month and is conducting regular training for a number of graduate students.

Wisconsin Carton Co. in Receivership

Because of financial difficulties which are said to be only temporary, the Wisconsin Carton Company, of Stevens Point, Wis., has been placed in receivership, with L P.. Moen, of that city, as receiver, apointed by Judge Byron B. Park, of the circuit court. The application for receivership was made by and consented to by the company. This carton company was established recently.

G. W. Mead Will Again Run for Mayor

George W. Mead, president of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., has made definite announcement that he will again run for Mayor of his home city at the spring election. This will be his third term in that capacity. He has the endorsement of the labor unions of the city, as well as the business men.

Paperboard Industries Association To Meet

The next meeting of the Paperboard Industries Association and of the Trade Practice Division will be held at the Commodore Hotel, New York City, March 25-27.

Members of the Paperboard Industries Association are eligible to attend the meetings of the Groups in which they are enrolled, and also the General Meeting, a part of which consists of the Trade Practice Session.

Members of the Trade Practice Administration are eligible to attend only the Trade Practice Session, which is held as a part of the General Meeting, Thursday afternoon, March 27, 1930.

In view of the situation existing in the industry, it is strongly urged that each member come to the meetings and participate actively in the deliberations. By attending the meetings, you will be sure to receive first-hand information as to just what is being done and what should be done to improve conditions in the industry.

Gilbert H. Montague, trade practice counsel, will attend the meetings on Thursday, March 27, 1930—he will also attend the meeting of the Trade Practice Committees and probably some of the other sessions.

Robert Gair Co. Elects Officers

George E. W. de Clercq, E. Victor Donaldson, Andrew Muirhead, T. Raymond Pierce and Allen M. Pope have been elected directors of Robert Gair Company. Lawrence Beattie, Graham H. Fairbanks, Robert Gair, Jr., Edwin R. Marshall and John M. Perry were reelected directors.

The executive committee has been increased to five from three members and now consists of George W. Gair, chairman; Lawrence Beattie, E. Victor Donaldson, Robert Gair, Jr., and Edwin R. Marshall. Mr. Donaldson is president of the Firstbrook Boxes, Ltd., of Toronto, which manufactures shipping containers and folding cartons. He formerly was president of the Rudd Paper Box Company, which was merged with Firstbrook Boxes, Ltd.

George W. Gair was elected president of the company; E. Victor Donaldson, first vice president and general manager; Robert Gair, Jr., vice president; Lawrence Beattie, secretary and treasurer; William Roegele, assistant treasurer; Wilbur F. Howell, assistant secretary, and Emil O. Sommer, controller.

ON EVERY ROLL

A Vickery Doctor at work on a fibre super-calender roll

BIRD MACHINERY

THE VICKERY DOCTOR IS SELF-ADJUSTING .....

There's no adjusting the blade of a Vickery Doctor. All the adjustments are built-in. On every size and type of roll—including fibre super-calender rolls—the blade adjusts itself. Let us install a Vickery Doctor on trial.

BIRD MACHINE COMPANY
South Walpole
Massachusetts

Demand for Paper Slowly Improving in Chicago

Distributors of Fine Papers, Book Papers and Tissues Optimistic Regarding Future Trend With Prevailing Request for Various Grades Satisfactory—While News Print Production Declines Relief Is Anticipated as Advertising Lineage Is Increasing

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., March 10, 1930—The paper business in Chicago is slowly moving out of the doldrums and into the promise of better days just ahead. Some of the lines are reporting at least fair business at the present time and see reason to be optimistic regarding the next few weeks. These include fine papers, book papers, tissues, etc. Merchants in these lines believe that the worst is over as far as business depression is concerned and they are not alone in this belief.

News print production, according to reports, has continued to fall off slightly during the past week though considerable relief is being found in statements showing that newspaper advertising lineage is now on the upswing. No unusual commitments have been reported as yet in this territory.

The board market shows an improvement with an average of the mills showing between a 75 and 78 per cent capacity according to statements made this week. The kraft situation has not changed appreciably. It seems evident that it will take some time to work off a heavy over-production that resulted in some uncomfortable price toppling recently. The waste paper market is better with the lower grades brightening up as the board market improves.

"Printers are taking it in the right spirit and paper houses are already reporting excellent results," comments Jack Hillyer of the Whitaker Paper Company on the recent plan installed in Chicago on March 1 to improve credit conditions here. Mr. Hillyer is chairman of a committee of paper merchants who worked out together with printers a credit control plan through an agreement with the Chicago Association of Credit Men by which the plan became operative March 1.

The paper merchants and printers arrived at an agreement by which a ninety-day limitation credit plan was put into effect through a series of conferences terminating in a meeting of paper merchants and printers held early in February. The paper merchants committee was composed of Mr. Hillyer, Mr. Julius, of J. W. Butler Paper Company, Mr. Gillette, of Chicago Paper Company, Mr. Washburn, of Messinger, and Mr. Martin.

The credit plan includes the following provisions:

1. Limitation of credit extended to Chicago printers to a period not exceeding 90 days with provision that printers accounts exceeding 80 days become automatically C.O.D. with all paper merchants.

2. Settlement of all past due accounts on a uniform basis according to a formula previously drawn up or through some central agency.

3. The placing with a central agency for collection all notes taken in settlement of past due accounts.

4. Placing on a 30 day basis all Chicago printers who have past due accounts on which notes are taken in settlement.

5. In case it is necessary to make any exceptions to the plan these should be confined to greeting card manufacturers, calendar houses and book publishers.

Credit Plan Bringing Good Results

6. The creation of a special committee to pass upon any points of controversy which may arise after the plan is put into effect. For example: The case of a printer whose credit has always been good but who, because of circumstances beyond his control becomes temporarily embarrassed financially. Committee representation to include one from the Master Printers' Federation, another by the Paper Merchants and a neutral party such as the Secretary of the Chicago Association of Credit Men.

According to Mr. Hillyer the plan involves no changes in terms. The entire purpose of the plan is to improve conditions regarding credit transactions and to eliminate any discrimination in the manner of settlement of accounts.

The names of the members of the Fine Paper Credit Group of the Chicago Association of Credit Men include Allen & Co., Berkshire Paper Company, Bermingham — Prosser, Blunden Lyon Company, Bradner Smith & Co., Butler Paper Company, Chicago Paper Company, Empire Paper Company, Fort Dearborn Paper Company, Import Paper Company, LaSalle Paper Company, Marquette Paper Company, Messinger Paper Company, Midland Paper Company, Moser Paper Company, Murnane Paper Company, Paper Mills Company, Parker, Thomas & Tucker, Seaman Paper Company, Swigart Paper Company, Tattershall Paper Company, Whitaker Paper Company, James White Paper Company, Wroe Paper Company, Douglas Wray Paper Company.

Factory Equipment Exposition Held

With the slogan "Organizing for Permanent Properity," as the keynote, the National Management Congress, the National Industrial Equipment Exposition and the National Materials Handling Meeting of the American Society of Mechanical Engineers met March 3-7, at the Stevens Hotel, Chicago, discussing the problem of economic stability and many collateral questions.

The National Industrial Exposition of factory equipment, supplies and services, held also at the Stevens, took a share of the spotlight. Elimination of waste, less inventory, better working conditions, safe operation and better industrial relations were the features of more than 115 exhibits which received the attention of a large number of manufacturing executives.

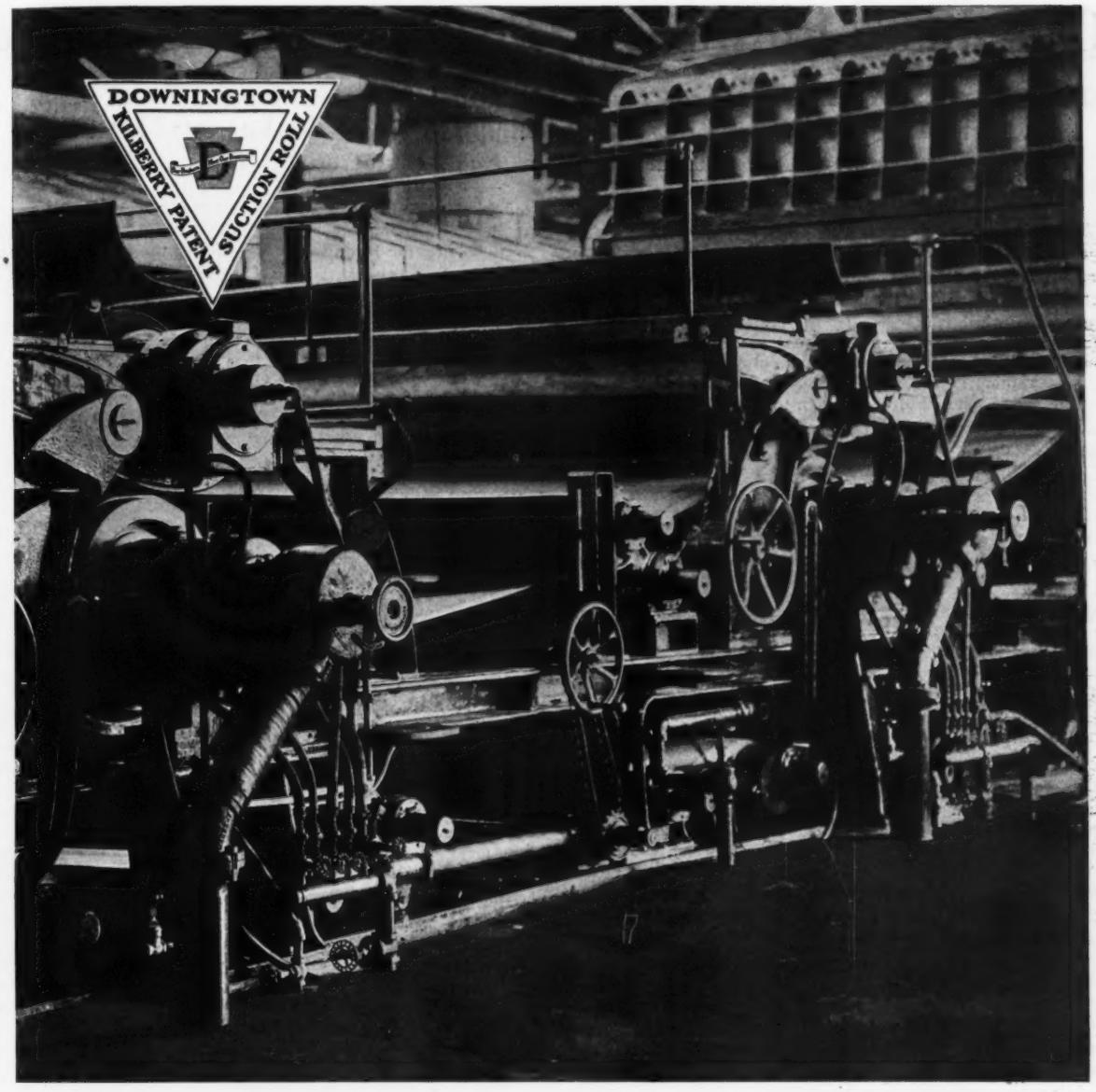
A list of the exhibitors included the following:

American Engineering Company, Philadelphia; Box Crane & Hoist Corporation, Philadelphia; Fairbanks-Morse Company, Chicago; W. A. Jones Foundry and Machine Company, Chicago; General Electric Company, Schenectady; Mathews Conveyor Company, Ellwood City, Pa.; Standard Oil Company; Texas Company; International Harvester Company; Luden Machinery Company, Fairfield, Ia.; Whiting Corporation, Chicago, and others.

One of the feature addresses of the National Management Congress was delivered on March 3 by Hugh P. Baker, Director of the Trade Association Division of the United States Chamber of Commerce, on "The Trade Association's Opportunity in Promoting Better Management." Mr. Baker is well known in paper trade circles. "Simplification and Mechanization in the Administrative Field," "Progress in Waste Elimination," Progress in Distributive Methods," "Plant Maintenance," "Wage Incentive Plans," Managerial Education and Training," and "Readjustments of the Machine Age," were subjects of other sessions that received the attention of visiting manufacturers. Inspection trips during the week's session included a visit to the W. F. Hall Printing Company, one of the largest printing plants in the world, on March 5.

Award for Government Paper

WASHINGTON, D. C., March 12, 1930.—Barton, Duer & Koch Paper Company has been awarded a contract for furnishing the Government Printing Office with 40,000 pounds of blue and manila calendered tag board in 23¼ inch rolls, bids for which were received on February 24, at 7.84 cents and 7.2 cents per pound.



Three Kilberry Suction Rolls at Price Bros. & Company, Ltd.

This illustration shows the No. 1 machine in the mill of Price Bros. & Company, Ltd., Kenogami, Quebec, Canada. Many modern developments are evident in the picture, among which are the Downingtown (Kilberry Type) Suction Rolls used at First and Second Presses and the Minton Dryer. Another Downingtown Suction Roll is used at Couch. Our literature completely describes the many improvements found in the Downingtown Suction Roll. Write for it today, and when in the market let us bid on your requirements.

DOWNINGTOWN MFG. CO.
DOWNINGTOWN, PA., U. S. A.

Canadian Pulpwood Restrictions Proposed

Effort Made to Secure Legislation to Prevent Raw Pulpwood Being Shipped Out of Dominion —Ontario and Quebec Premiers Endeavor to Impress News Print Interests That Forest Resources Are Being Utilized on Non-Remunerative Basis

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 10, 1930.—Indications are not lacking that further efforts will be made to tighten up the restrictions on cutting and export of pulpwood in Canada. For instance there has been placed on the order paper in the Dominion House the following motion which will come before Parliament for discussion: "In the opinion of the House the time has come for Canada to impose an embargo or exportation duty on pulpwood, coupled with such legislation, if necessary, as would assure settlers a fair remuneration for the wood taken from their lands." About fifteen years ago the exportations of pulpwood to the United States was not very far short of the total used in Canadian mills. In 1916 it is estimated that Canadian mills used 1,764,900 cords of pulpwood and 1,068,000 cords were exported.

For the year 1928, pulpwood used in domestic manufacture amounted to 4,791,000 cords as against exports of 1,532,000 cords to the United States. Thus it can be seen that although relatively domestic production has overshadowed exports, these exports amounted virtually to 25 per cent of the total pulpwood production in Canada; on a dollar and cents basis this amounts to about $15,000,000 annually. It will be remembered that some time ago—in fact many years—proposals have been put forth to put an embargo on the export of all pulpwood. This is a measure that can only be put into effect by the Federal authorities, and a great outcry was raised on the part of those owning pulpwood limits on freehold basis or dealing in pulpwood cut from farmers' lots.

Now, apparently, a new movement is under way to endeavor to secure a market in Canada at a remunerative price for all pulpwood cut on private lots and coincident with this movement another effort is to be made to secure legislation which will prevent raw pulpwood being shipped out of the Dominion. In the provincial field the premiers of Ontario and Quebec are apparently continuing their efforts to bring the news print companies to a realization of the fact that they are utilizing the forest resources on a non-remunerative basis. A short time ago Premier Taschereau said, "We have refused the International Paper Company permission to cut trees under the prescribed size and we learn that 800 men will have to leave the bush in the St. Maurice district in consequence." Of course, it is pointed out, much depends on how the term "prescribed size" is interpreted, but such a tightening up might prove awkward to large operators.

Ontario Paper Co. Personnel Changes

The Ontario Paper Company, Ltd., Thorold, Ont., this week announced a number of changes in the personnel of the company, following the recent death of Warren Curtis, Jr., former president. The late Mr. Curtis will be succeeded by Col. Robert R. McCormack, who has been appointed to serve in that capacity until the next annual meeting. Among other changes is the naming of the present vice-president of the company, A. A. Schman, of Montreal, as general manager and executive officer, who is now placed in full and complete charge of all interests of the company in Ontario and Quebec, including the paper mill at Thorold, Ont., and the new power and mill development at Manicougan and Outardes, Que. Several other appointments were announced simultaneously. D. McLeod, formerly assistant general superintendent of the Price Bros. paper mills, becomes general manager of the paper mill at Thorold, and George Boisvert, well known forest engineer in Canada, becomes woods manager, responsible for the woods operations in the Province of Quebec, and is also put in charge of the company's office in the ancient capital. He has been plant manager at Shelter Bay and occupied the position of assistant woods manager, holding the record for being one of the first three French Canadian forest engineers trained in the province.

Abitibi Plans Charter Change

Abitibi Power and Paper Company has called a special general meeting of shareholders to be held at Iroquois Falls, Ont., on June 8 to ratify the extension of voting rights to the 6 per cent preferred shareholders upon default of payment of dividends. According to the wording of the present charter, the default must be in the payment of four consecutive quarterly instalments, and now it is intended to remove the word "consecutive." The matter was called to the attention of Abitibi by a banking group which purchased $26,000,000 of the preferred in 1928. The group was insistent upon the amendment before it acquired the stock, but finally accepted the company's agreement to use its best efforts to have the amendment made. A meeting for the above purpose was called for April of last year but had to be postponed because the shareholders failed to send in a sufficient number of proxies. A further attempt is now being made.

Reduction Asked in News Print Rates

A hearing of international importance concerning the tariff on news print will come before the Canadian board of railway commissioners at Ottawa on April 10. Two years ago an order was passed increasing the rates on news print from Canada to the United States. On request of Canadian producers the board suspended the increased tariff, pending a hearing. The present application is launched by producers for a reduction of rates and a rearrangement of rate areas. Last year United States producers launched a similar application before the Interstate Commerce Commission, a lengthy investigation was held and the matter was allowed to stand. Generally, after cases of this kind have developed before the commerce commission and railway commissioners for the territory within their respective jurisdictions, conferences are held between the interested parties and a decision arrived at either by agreement or by order of the rates tribunals in both countries.

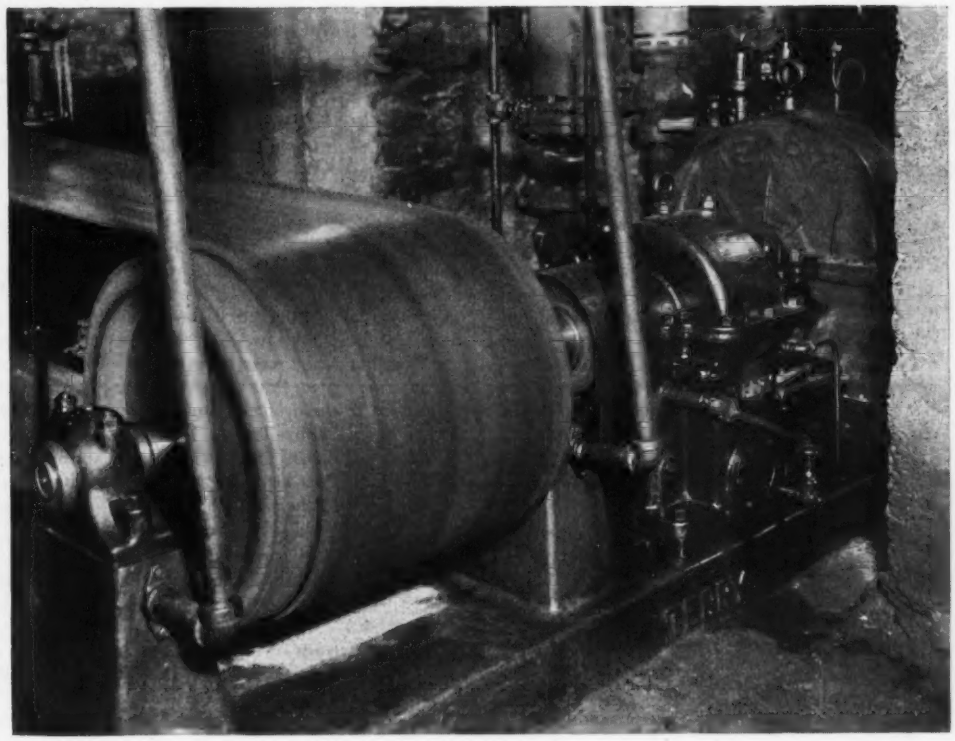
New System of Accident Prevention Figures

Progressive methods have recently been inaugurated by A. P. Costigane, secretary-engineer of the Ontario Pulp and Paper Makers' Safety Association, in the offices of the association in Toronto. For example, a statistical sheet is now being prepared and sent out showing in comparison the standing of every pulp and paper mill in Ontario, in regard to accidents and other data, for each month during the current year and in comparison with the same period of the previous year. The sheet is the result of the thought that executive officers of the mills like to make a comparison. Under the new system any of the mill executives can see at a glance whether or not a mill in his jurisdiction is making progress or falling behind in accident prevention matters. The redesigned sheet is appealing strongly to mill officials, enabling them, as it does, to put their finger immediately on any leakage or weak spots. The annual meeting of the Ontario Pulp and Paper Makers' Safety Association will take place some time during the end of this month in Toronto.

Canadian Paperboard's Affairs

J. G. Kerry, Toronto, president of the Canadian Paperboard Company, which is now in the hands of a receiver, has issued a

TERRY
Paper Machine Drive



100 H.P. drive in mid-western mill. Operates with steam at 180 lbs. and exhausts against 25 lbs. back pressure.

NOW . . . . OVER 19,000 H. P. IN SERVICE

In mills from Canada to the Gulf and from Maine to Washington, a total of over 19,000, H.P. of Terry Paper Machine Drives are installed.

This includes units of all sizes from the small 50 H.P. drives to the 600 H.P. and 700 H.P. kraft and newsprint machines.

In the design and operation of this large volume of turbine paper machine drives, Terry engineers have collected a tremendous amount of important data. Let them help you with your problems.

Ask for Bulletin S-89.

The TERRY STEAM TURBINE COMPANY
TERRY SQUARE, HARTFORD, CONN.
Steam Turbines - Gears - Shaft Couplings

T-1054

letter to the bond and shareholders in which he states that the best means of protecting the latters' interests, together with those of the creditors and general stock holders, in the present situation, would be through the appointment of a receiver which would ensure the carrying on of operations without interruption—which course has been pursued. Mr. Kerry expresses his confident conviction that, if granted a respite from its pressing obligations, and assuming that general business keeps up and that the recent advance in prices is maintained, the company will quickly be able to work into a position where it can resume its payments to all its creditors.

Getting Out Big Pulpwood Cut

According to word from Nova Scotia logging and pulpwood operations in the eastern section of the province were temporarily tied up during the early part of February by an unusually heavy fall of snow, but in the central and western sections activities are going along at a rapid rate. In Cape Breton, where numerous camps are engaged in cutting both pulpwood and lumber, a series of heavy snowfalls held up operations for a few days, occasioning a slight monetary loss as well as of time but now operations are going smoothly again. In the eastern section of the province the winter's cut will be slightly greater than that of last year, due largely to the increased cut of pulpwood. In Inverness and Victoria counties several lumber operators are getting logs out, while in the southern section of island several camps are getting out pit props for use in the colliery area. On the main land logging operations have been going on steadily and while in many sections the cut shows signs of decreasing, the average, it is believed by exporters in close touch with conditions, will be about the same as last year. On every side there are evidences of an increased cut of pulpwood. Small wood lot owners from Cape North to Cape Sable are out scraping together a few cords in the hope of running their efforts into profitable winter employment. Establishment of the Mersey Paper Company's plant at Liverpool, combined with the operation of eight ground wood pulp mills and the annual exports to the United States mills of pulp in its unmanufactured state, have led to the present situation.

Survey of Woods Operations in Ontario

With practically all the cutting over and hauling to the railroad and waterways dumps nearly finished, this season's operations in Northern Ontario can be figured as nearly completed. A recent survey shows the cut to be well up to expectations, labor having been plentiful and weather conditions, if not exactly ideal, at least fair. The deep snowfall, with usual thaws, made the eastern operations south of North Bay difficult at times, particularly where lake travelling had to be done, the early snowfall in November preventing the keen frost which prevailed later from getting down. Along the T. & N. O. from North Bay to Kapuskasing cars are being loaded with pulpwood and all operators report a fair winter's work. Operations in the vicinity of Port Arthur and Fort William were ahead of last year and many outfits dispensed with a big percentage of their cutters early. With the temporary closing of the Thunder Bay and the Fort William mills, owned by the Abitibi Power and Paper Company, the looked-for quiet time on their operations did not materialize. Railroad tie contracts held by C. W. Cox and the Mashaba Company, of Port Arthur, are well ahead of schedule. Most operators will be able to get their cut to their water or railroad landings.

E. V. Donaldson Gets Big Job

The announcement this week that at the annual meeting in New York of the Robert Gair Company, E. Victor Donaldson, of Toronto, had been appointed vice president and general manager of the company, which is one of the largest in the paper box and board industries in the world, caused a good deal of interest in paper box and paper circles in Toronto. Mr. Donaldson's rise in the paper box industry has been meteoric. He first attracted attention a few years ago when he dropped into the Rudd Paper Box Company, on Richmond street, Toronto, and asked W. P. Bennet for a job that would hold the possibility of an interest in the business. He got the job and it was not many months before he bought out Mr. Bennet and was in full charge of one of the city's biggest plants. Seeking new worlds to conquer he opened negotiations with Firstbrook Bros., who conducted a large carton and wooden box plant in Toronto and it was not long before he had merged it with the old Rudd company and erected a big new plant at Mount Dennis, near Toronto, with himself as president. That he has been selected by the Robert Gair Company as general manager of their huge business is considered a high tribute to Mr. Donaldson who is known throughout Canada not only as a clever, keen business man, but as one of the most likeable men in the industry.

Notes and Jottings of the Trade

Roy Lillie, an employee of the Dryden Paper Company at Dryden, Ont., was killed a few days ago when he was struck on the head by a heavy timber while he was clearing wood away from the conveyor in the pulp pile. His widow and four children survive.

Work on laying concrete floors is now under way and two more sub trades have been awarded in the erection of the $50,000 factory building being erected at Peterboro, Ont., by the Robert Martin Corrugated Paper Box Company. An extra 80 feet has been added to the original plans as previously reported which call for one story, 300 by 100 feet, brick and concrete construction.

Corrugated Paper Box, Ltd., has declared a regular quarterly dividend of 1¾ per cent for the quarter ending February 28, 1930, on the preferred shares of the company. Dividends were payable March 1 to shareholders of record February 15.

Sir Mark Sheldon, president of Carmichael & Co., Sydney, Australia, paper distributors of Canadian papers in Australia, who has been visiting paper interests in Canada for some weeks, has left for England.

The many friends of Edward Collett, of Collett & Sproul, paper box manufacturers, Toronto, were pleased to see him out again after a protracted illness.

A. B. Martin, president of the Pacific Mills, Ltd., of Ocean Falls, B. C., and A. E. McMaster, vice-president and general manager of the Powell River Company, Powell River and Vancouver, B. C., have been in the east of late getting in touch with the news print situation. They reported conditions on the Coast as being somewhat better than they appeared from an Eastern Canada view. The paper mills, they said, were running closer to capacity there than in the Montreal district and all round prospects were considered very fair. Naturally, they said, the mills on the coast have not felt the effects of the hectic negotiations on the subject of news print prices to the same effect as those in central and eastern Canada.

A. E. Smith, who has been in charge of the order department at the head office of the Howard Smith Paper Mills in Montreal, has been transferred to the Toronto office of the company where he has joined the Toronto sales staff.

Provincial Paper, Ltd., Toronto, have sent out samples of Multifold Enamel, a new coated paper produced by a new process, giving rugged strength combined with a color and high finish previously considered impossible in a folding coated paper. It is claimed that it will stand up in folders and broadsides under any sort of handling, and is well suited for covers.

A provincial charter has been granted the Scutan Company of Canada, Ltd., of Montreal, with a capital stock of 3,000 shares without par value, authorizing them to carry on the business of manufacturers and dealers in lumber, pulp and pulpwood.

Toronto wholesale paper merchants have been asked to cooperate with the Toronto Typothetae in forming an organization as part of the Typothetae composed of groups such as the ink manufacturers, electrotypers and engravers, with a view to solving problems that arise between these groups and the printing industry. It is likely that many of them will identify themselves with the organization either as associate or active members and avail themselves of the various services offered by the Typothetae.

THERE ARE SPEED REDUCTION jobs where only a right angle drive will fill the bill. Under such circumstances, the Jones Worm Gear Speed Reducer, shown above, will deliver the maximum of power at the minimum of cost and upkeep. There are no favorites in our family—we know that each type of reducer we make—spur, worm, herringbone—has its special application and its special merits. All are alike in the quality we build into them. Quick service from a large stock of standard ratios. Let's talk over your speed reducer requirements on the basis of selecting the machine best suited for your particular speed reduction job.

W. A. JONES FOUNDRY & MACHINE CO., 4401-4451 W. Roosevelt Road, Chicago, Illinois

Outlook For Paper Brighter in Philadelphia

Satisfactory Volume of Orders for Standard Grades of Paper Being Received by Mill Representatives and Wholesale Paper Merchants—Fine Paper Market Exhibiting Strong Undertone With Book Paper and Better Grades of Writings Active

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 10, 1930.—With a brighter aspect to the paper market the Philadelphia trade is now preparing for broader distribution. No notable changes have been scheduled in the prices of any grades. It is a time of deep and earnest sales effort on the part of the salesmen and of the executives who supervise distribution, with new channels explored for paper consumption in an effort to add to revenues of the dealers and to stimulate demand.

Wholesale paper merchants and mill representatives report a good volume of orders in bulk although contracts are not being given for any longer period than the next few months. Prices in the wholesale market continue steady and slightly under quotations of the past year, when the normal schedule of values was reached. Book paper in quantity is about the most active product in this city among the fine grades. Better grades of writing paper are also active but the lower priced products are subjected to keen competition. Advertising papers are in demand among the more modish grades of book papers and imported products and general lines for such purposes. Coated papers are slightly more active but not keeping pace with unfinished grades of book.

While the good weather promotes buying of coarse paper as seasonal demands awaken, there is broader scope to the demand for various lines of wrapping paper, corrugated products, bags, millinery and clothing containers, and other converted products which are consumed by manufacturers and mercantile trades. Builders supplies, too, are more lively, though restricted to roofings and builders boards. Tissue papers are becoming active with the nearness of the Paschal season and show a firming tendency. Other grades of paper in waxed and glassine products are slightly improved. Cellophane and combinations with paper products are among the most sought of present day specialties.

Paper stock, which took a spurt a few days ago, has again returned to the listlessness that prevailed for a long period prior to the activity of a fortnight ago. Little demand for any grades prevails after a fair volume of shipments to the mills of the better grades. The cheaper stocks have been accumulating, as board manufacturers are practically out of the market. Large corporations manufacturing their own board, and with converting departments, continue to buy from single dealers or are packing their own stock, so that they have little influence on the general paper stock market although their plants are running at from 75 to 90 per cent of capacity. No changes are noted in prices of paper stock. Rags for roofings are more active as springtime awakens demand.

Interesting Problems For Paper Trade Association

Interesting problems vital to the trade in the present day business crisis are to be expounded at the meetings of the Philadelphia Paper Trade Association scheduled for the remainder of the year, as that organization has planned for the furtherance of the welfare of the dealers and of the industry as a whole in a broader scope of trade educational program. The perfection of the program will be effected at the meeting of the association to be held on Wednesday of this week when the committee recently appointed for this phase of trade work will hold a preliminary session. The Program Committee, with N. A. Considine of the Paper House of Pennsylvania as chairman; and with Leon Beck, Charles Beck Company; L. F. Supple, Whiting Patterson Company; Thomas R. Fort, Jr., Thomas W. Price Company; Edward Keller, Garrett-Buchanan Company; and George W. Ward, D. L. Ward Company; serving under appointment of W. S. Wilcox, president of the association and of the Wilcox, Walter, Furlong Company, will prepare topics for discourse in the future meeting of the association. The committee will outline activities along this line for the next six months. Several important resolutions will be brought up by the committee and these will occupy the attention of the various members. The meeting of March 12 will be an important event in the Fine Paper Division when resolutions affecting the local trade will be discussed and come up for action. Leon Beck and N. A. Considine, the former past delegate to the National Paper Trade Convention, and the latter present delegate, will present their joint reports to the dealers. At a session to be held later in the month there will be reports of the wrapping paper activities of the national convention by George W. Ward, who substituted for T. H. B. Smythe, delegate from the local body who was detained here by the death of the late president, Harvey E. Platt, of J. L. N. Smythe & Co., while Charles A. Wilder, of Wilder Bros., was represented on the Twine Committee. N. A. Considine, as vice president of the Philadelphia Paper Trade Association, represents the Wrapping Paper Division.

Paper Men Frolic At Typothetae Banquet

Members of the Philadelphia Paper Trade Association joined with the master printers organization in celebrating the annual Typothetae banquet, held on March 6 at the Benjamin Franklin Hotel. The banquet was a novelty in comparison to those held in previous years, when a Graphic Arts Night formed a trade Mardi Gras of colorfulness in costumes and gaiety of performance. This year's affair was marked by elaborateness of program with a wide range of vaudeville entertainment, the awards of prizes and the dance which followed the serving of a feast worthy of the reputation for hospitality that ever has marked the yearly social commingling of trade associates in the allied industries. From the moment of the opening feature of the program—the air attraction of Amos an' Andy in the usual evening hour's broadcasting, and the brief word of welcome from President E. Hoeflich of the Typothetae, there was lively entertainment with ten acts and choral singing and the final dance that lasted until after midnight. Gifts were donated by the paper houses, including the Raymond & McNutt Company, D. L. Ward Company, Whiting Paper Company, Whiting Patterson Company, Garrett-Buchanan Company and the Charles Beck Paper Company. To the paper trade went the first door prize, William Hendrie Lloyd, of the Dill & Collins Company, winning that honor in the draw and acclaimed by Al Cuomo, master of the prize awarding ceremonies. Marion Berry, of the Sattherthwaite Cobaugh Company, won one of the six bridge deck prizes donated by the D. L. Ward Company, while Harry McNamara, of the Whiting Paper Company, was awarded the Hospital Kit donated by Hamilton R. Marsh. J. J. Schaller, manager of the papeterie department of the Whiting Paper Company, won the "Town Crier," donated by C. C. Abell. Paper concerns represented at the banquet were Dill and Collins Company, W. H. Lloyd, W. R. Ingersol, W. R. Korkamp, and associates on the staff; D. L. Ward Company, represented by W. A. Hentz and D. W. Bond, with ten guests; Wilcox Walter Furlong Company, E. T. Walter, Thomas S. Furlong and Louis Megargee; Paper House of Pennsylvania, Charles T. Pabst, Henry Considine, Earl Mullan, Harry Rossell, Harry J. Fleming, John Patton and fifteen guests; Charles Beck Company, Andrew Simon, H. A. Simon, E. T. Linker, G. P. Johnson, H. M. Glenn and ten others; Whiting Paper Company, DeForest Coots and Joseph Schaller with six

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Du Pont Quinoline Yellow Conc. produces bright canary and lemon shades. Du Pont Crocein Scarlet gives seasonal reds their most vivid brilliance.

Both have excellent solubility and high tinctorial power. Both possess good fastness. Both are representative of the dependable du Pont line of dyes, which fit every need.

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trade associates; Paper Merchants, Inc., Edward McCorkendale and party of ten; Satterthwaite-Cobaugh Company, Howard Satterthwaite, Clyde S. Cobaugh, Frank M. Berry, Otto Renner of the George W. Wheelwright Company and twelve guests; Thomas W. Price Company, Norman Fort, William Watts, Harry J. Smith, Francis Prevost, Davis H. Thomas, William H. Burton, John B. Tuttle, Charles Megronigle, and fifteen guests; Whiting Patterson Company, Leo F. Supple, R. W. Fishburn, Warren Hait, Ralph Keenan, George Beatty, W. R. Armacost and Murell Deery with ten guests; Raymond McNutt Company, M. K. Christine, Larry Gipp and ten guests; Richie Howarth Paper Company, John R. Howarth and associates Vincent Sherock, Harold Fullmore and eight guests; A. S. Datz & Son, Howard Marcus, T. A. Convery, John J. McKenna, and party of twelve; Garrett Buchanan Company, Morgan H. Thomas, E. A. Keller, Thomas F. Curry, Joseph Weaver, George Weaver, and thirteen guests; A. M. Collins Manufacturing Company, Hubert Foster, H. W. Kramer, H. W. Tunstall and party of eleven; Champion Coated Paper Company, Charles A. Labor; A. Hartung, Inc., Edward W. Hartung, John A. Frantz, John B. Smith, Edward Hahn, H. M. Sheip and twelve guests; Eaton Crane & Pike, John J. Highland; Lindsay Paper Company, D. Lindsay Evans and Harry Fleming, of the Hemingway Paper Stock Company.

Silver Jubilee For Paper Stock Merchants

Plans for the coming March 26 celebration of the Silver Jubilee of the Wholesale Waste Merchants Association have been completed and the trade is looking forward to a memorable occasion with a record attendance at the banquet and entertainment to be held at the Bellevue Stratford Hotel in the month end. The committee in charge of arrangements for the Jubilee—William L. Simmons, John Simmons's Sons; Charles J. McNichol, P. Di Sante & Co.; and William J. McGarity, Sr., of the Penn Paper and Stock Company; have perfected a most elaborate program with a wide and diversified vaudeville schedule and an exceptionally good menu to commemorate this 25th anniversary of the founding of the body which was formerly the Philadelphia Paper Stock Dealers Association. More than five hundred are expected as invitations have been sent to all middle west and eastern mills and stock dealers by the local associates included in the membership and covering all branches of the waste trades.

Paper Box Supply Dealers Attend Convention

Local members of the Paper Box Makers Supply Association, auxiliary of the National Paper Box Manufacturers Association, with headquarters in the Liberty Title and Trust Building, who were attendants at the annual convention at Cleveland and who returned home last week are Charles Matthias, of the Matthias and Freeman Paper Company; Philip Rudolph, of the firm bearing his name; Stokes & Smith Company, represented by G. Z. Sutton; A. Hartung, Inc., by A. Richard Hartung; A. M. Collins Manufacturing Company, Howard W. Turnstall; and L. P. Supple of the Whiting Patterson Company. There were exhibits held by these supply houses in mechanical units and paper supplies, at the Hotel Cleveland.

Fischer Paper Co. In Financial Difficulties

A voluntary petition in bankruptcy has been filed here by the Fischer Paper Company, its allied business conducted as James S. Mason & Co., 212 South Front street, and its owner, Philip Fisher. No schedule of liabilities or assets has been filed. John M. Hill has been appointed Referee by the U. S. District Court sitting here. The Fischer Paper Company and its allied concern conduct a wrapping paper, bag, twine, and specialty business at the South Front street address and has been established for the past five years.

Florida Travelers Return

Travelers from the Philadelphia trade who have been wintering in the southern resorts and who are now returning to their desks are President Morgan H. Thomas, of the Garrett-Buchanan Company, and Harry F. Donahue, of the Molten Paper Company. Mr. Thomas returned early last week, while Mr. Donahue who has been a month at Miami Beach, returned early this week.

Harold L. Winsch Manager For Eaton Crane and Pike

Harold L. Winsch, who for the past two years has been covering the Philadelphia trade as assistant manager of the Eaton, Crane & Pike Company, local branch at 212 South 9th street, has been appointed manager of the Quaker City headquarters. He succeeds J. H. Hodkinson, former manager, who resigned to join the staff of the *Wall Street News* as financial editor.

Charles McDowell Cruising in Florida Waters

Charles McDowell, head of the century old McDowell Paper Mills in the Manayunk district, left last week for the southern climes, where he will spend the next three weeks cruising the Indian River and the Coast. He is the guest of Charles J. Eisenlohr, millionaire cigar manufacturer, of Otto Eisenlohr & Bros., this city. His first stop will be at Stuart, Florida, in a fishing cruise on the Eisenlohr yacht *Charmarie*.

Clark H. Morian Visits Richwood Mills

Vice President and General Manager Clark H. Morian, of the Cherry River Paper Company, with executive offices in the Pennsylvania Building, accompanied by J. M. S. Ewing, of the local staff, spent the week at the Richwood, Va., paper mills of that company inspecting and supervising the plant preparatory to extension of production of the sulphite and sulphate products manufactured by that concern. The Cherry River mills have been running full on the line of specialties which it has developed and with a growing demand for its envelope papers.

Frank Matthias Travelling New York

Frank Matthias, of the Matthias & Freeman Paper Company, is spending the remaining weeks of March touring through New York State, visiting the paper box manufacturers of that section with the latest lines of the Sunrise box makers papers produced for his firm, located at 5th and Cherry streets. The Matthias & Freeman Paper Company exhibited the new lines at the National Box Makers Convention at Cleveland in late February where Charles Matthias, of the firm, was director of the displays.

Philadelphia Quartz Co. Mails Giant Letter

The Philadelphia Quartz Company, manufacturers of silicate of soda in its various forms, of 121 South 3rd street, Philadelphia, are mailing to paper manufacturers a giant letter printed on Offset paper containing silicate of soda. The letter mentions the fact that the company recently engaged a well-known firm of investigating engineers to analyze the merits of the use of silicate of soda in paper making. One of the surveys shows how a paper mill uses silicate of soda to increase clay retention 10 per cent with a subsequent saving of over $25 per day. Another survey shows the reduction of one-half hour in beating time by the use of Quartz Quality Silicate. All reports indicate improved quality paper.

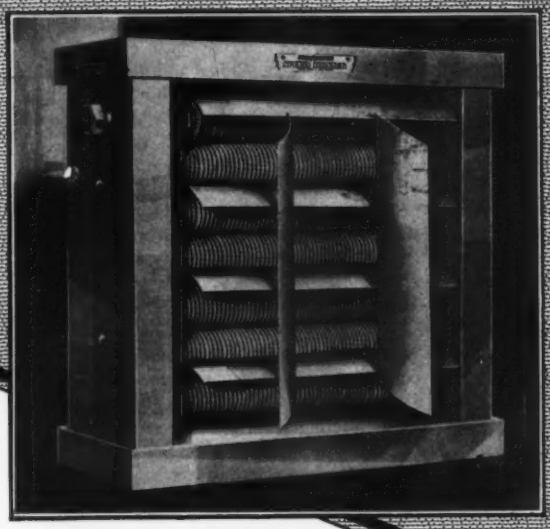
Safety Records at Finch, Pruyn & Co.

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., March 10, 1930.—A number of safety records have been established in the various departments of Finch, Pruyn & Co., according to officials. No accidents have occurred in the company's mills since November, the report shows. The electrical crew had the best record of 1,358 days without an accident serious enough to cause any lost time among employees. The men who handle the pulp have 828 days to their credit while the wood handling department has established a record of 515 days. The number of days without a serious accident in the other departments follow:

Grinders and press room, 284; boiler house, 274; pulp mill repairs, 273; finishing and loading department, 136; paper machines and beaters, 114; paper mill repairs, 100. It was also announced that the mill has been operating at full capacity with indication that these conditions will continue during the entire year.

ROSS Unit Heaters of all types



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The new Ross Unit Heater, designed in various types, is just one indication of the extent of Ross Heating, Ventilating and Drying service to the pulp and paper industry. Whether the need is for complete machine room heating or merely to correct a sectional problem—there is dependable ROSS equipment to efficiently and economically meet the requirements.

FOR even the smallest piece of equipment in connection with heating, ventilating and drying—the specialized Ross experience, knowledge and manufacturing facilities can be utilized to advantage with positive savings in time, trouble and expense. Let us figure on your small equipment.

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Regional Shift in Production*

By D. C. Everest[1]

I have been asked to speak on the subject of Regional Shifts in Production in the Paper Industry. This is no small job. If one is to discuss this subject intelligently, he must go back to the early foundation of the industry in this country, in fact, to see how regional shifts have worked out, he must even go back to the beginning of paper making in China and the later development of the use of papyrus in Egypt. Today China makes but little paper and Egypt, which once supplied the civilized world with papyrus, does not manufacture a pound of paper.

It is not my intention to give a history of the paper industry from 2,000 B. C. to date but there is some interesting history we should note. In the 8th century the Saracens introduced paper making into Europe and established the first paper mill in Spain. Flax was the first material used and later cotton.

The paper imported into Europe from Damascus was likewise made from cotton. Rags were first used in Spain in 1085 and the first linen paper was made in 1100. The development of the industry was slow, but it kept pace with the educational development. Italy had mills soon after Spain. France began manufacture in 1189. England began in 1330 and Germany in 1390.

Political and Economic Changes

Political and economic changes have caused a constant regional shift in production from the earliest time. Spain today produces scarcely any paper, whereas the Scandinavian countries, which only within comparatively recent time established mills within their domain, are now manufacturing paper in great quantities and are constantly increasing their output.

In America we have had a constantly shifting regional development. In 1690 William Rittinghuysen, an experienced paper maker from Holland, entered into partnership with Wm. Bradford, the first American printer, and together they opened the first paper mill on American soil. It was located on a creek since known as Paper Mill Run, near Philadelphia, and here they manufactured paper from the rags of the home grown flax. The combine formed by Rittinghuysen, the paper maker and Bradford the printer, being the first vertical trust established in this country. With Bradford's exclusive distribution of the printed product and Rittinghuysen's control of the raw material supply through his being the only user, the partnership managed to conduct a successful business for fully 20 years, when Wm. de Wees established a rival concern in close proximity to the first mill. These mills, manufacturing paper entirely by hand, controlled the American market until 1756 when the first pulping engine was introduced in this country from Holland.

Within fifteen years from this date, there were 40 mills established in Pennsylvania, Delaware and New Jersey, with an annual production valued at more than half a million dollars. Here was the first regional development in this country, a shift from Holland. The political developments of the time which covered the period of the American Revolution greatly stimulated the use of paper. It is interesting to note that with the increase from two mills to 42 mills within fifteen years, and with the cessation of the war, that there was evidently over production as on July 4, 1769 the Congress found it necessary to pass a tariff act protecting the American industry to the extent of 7½ per cent ad valorem "on all writing, printing, or wrapping papers, paper hangings and paste boards." On all other goods, wares and merchandise, 5 per cent ad valorem. In 1790 parchment and vellum were added to the list and the duty increased to 10 per cent. Changes were made in tariff rates in 1792, 1794 and again in 1816 when the rate was fixed at 30 per cent ad valorem. Constant changes have since been made in the tariff and later we shall see how the elimination of the tariff produced one of the greatest regional shifts in the history of the industry in the United States.

Departure from Rags as Raw Material

In 1794 a large mill for that time was established in Troy, N. Y., and in the same year one at Fairhaven, Vt., where coarse wrapping was made from basswood bark, this being the first departure from rags as raw material.

The manufacture of the cylinder machine by John Ames of Springfield, Mass., in the period 1822 to 1829 and the successful manufacture of straw paper at that time together with the manufacture of Fourdrinier machines by Phelps and Spofford in Connecticut in 1830 brought about a new regional shift in the industry and by 1850 only five mills were manufacturing hand made paper. During the period 1830 to 1855 every possible source of fibre was tried out. With the introduction of mechanical and chemical wood pulps during the last half of the nineteenth century and the further refinements in the utilization of old papers and rags, the industry was faced with further regional shifts and consequent economic upsets.

In the early history of the industry, regional development was due to the fact that all persons having a knowledge of papermaking were confined to one neighborhood and with the demand for the product, it was easy for those who had gained knowledge of the business to interest capital and set up rival concerns. As the country grew mills using waste materials were established near cities where there was some concentration of population. With the advent of wood pulp, this situation was changed. Mills were established in adjacent to the timber areas of Northeastern states. The discovery of the use of chlorine for the cleansing and bleaching of fibers helped in the establishment of the high grade mills. Massachusetts and Connecticut became the home of the fine writing mills. Book mills were scattered through New England, New York and Pennsylvania.

As population moved westward new mills were established in Ohio, Indiana, Michigan, Illinois, Wisconsin and Minnesota.

The Home of Straw and Book Papers

Ohio, Indiana and Illinois were particularly interested in the manufacture of straw papers. Michigan became the home of large book paper plants. The establishment of book mills in Michigan was due almost entirely to one man who established the old Gibson mill at Kalamazoo, nearly every other mill in that vicinity being descendants of that mill through men who were associated with the first mill forming new companies and men who were in these new concerns organizing other companies. Here was an instance of concentration of paper makers, a supply of capital, a reasonably close market for the product and for the collection of old papers, etc. The rapid development of the industry in that place brought about a regional shift for a portion of the book industry which was not pleasing to the then established mills.

Wisconsin and Minnesota, during the period from 1870 to 1900, established many mills for the manufacture of paper from wood. This regional development again caused a shift in production of wrapping and other wood papers and, as has been the case, in every regional shift, the proposition was overdone causing a reaction on all the established mills as well as giving the new ones a rather difficult existence until consumption again caught up with production and the situation became fairly well balanced.

The one great regional shift which probably affected the whole paper industry more than any other occurred in 1911 and has

* Presented at the annual convention of the American Paper and Pulp Association, New York.

[1] Vice Pres. and Gen. Mgr., Marathon Paper Mills Co., Rothschild, Wis.

"M & W" Drum Winders for Super-Calenders

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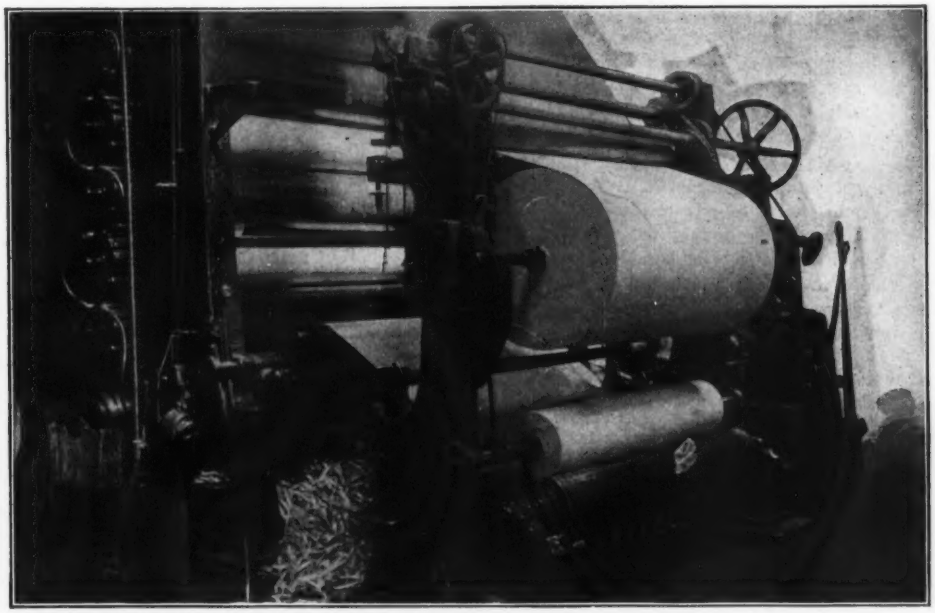

Two-Drum Type Winder (Photograph taken in one of the mills of the Kimberly-Clark Co.)

Built with Two or Four-Drums
Makes use of wide stacks desirable

Rolls trimmed direct from Super-Calenders —(retrimming unnecessary).

Rolls readily changed from winding drums to unwinding shaft by means of self-contained electric motor lift.

Straight, hard rolls are made without wrinkles . . . no soft rolls or telescoped ends.

Winders equipped with automatic tension regulation to eliminate paper breaking between calender and winder . . . and to regulate the hardness of rolls to be wound.

For wide stacks of Calenders, the "M & W" Four-Drum Super-Calender Winder reduces the waste of finished product to a minimum.

All features of the well-known "M & W" Four-Drum Winder used for making shipping rolls direct on paper machine are retained—such as independent winding of rolls on independent shafts, etc.

"M & W" Four-Drum Super-Calender Winders equipped with Removable Top and Bottom Slitters. "M & W" Brass Collapsible Winding Shafts are the latest improvement for High Grade Mills.

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continued for the past 20 years. The elimination of tariff on news print caused the regional shift of production of that grade to Canada. The prime cause of this shift was political but it has been argued that the economic situation was the compelling factor for the change. The economics of the situation were incidental and would have undoubtedly forced such a shift later but right at that time the manufacturers of news print were the victims of political trade. Had the effect of this regional shift been confined to the news print mills, and through their inability to compete in news print these mills had been eliminated, it would have been a comparatively simple thing. A few stockholders would have lost considerable money and the situation would now be forgotten. But as always happens in one of these regional shifts two things occurred. First—The mills which had been making news print commenced to shift to other grades. Wrapping and book were chiefly affected as it was easier to shift to these grades. We have had twenty years of this grade shifting in these old news print mills and we have not yet been able to digest this tonnage in other grades profitably. Some of these machines will still be with us twenty years from now.

Second—The thing which always happens in these wild rushes of regional development has occurred in Canada. Through desire on the part of the Government to exploit its resources, and build up the country; the desire to private enterprise and to secure ample timber and hydraulic power; the urge of a constantly increasing demand for news print has brought about an over produced condition in Canada which cannot be absorbed by the normal increased use under five or six years if no more mills are built or machines added. This has been true of every regional shift ever made. Every man has an idea he can dominate the situation and that no one will be building concurrently. If in 1932 the estimated use will be so many tons, he builds to meet it, not realizing that maybe a dozen others are doing the same thing with the same idea in mind.

Regional shifts have had greater effect since 1909 than ever before. During that year the annual value of the product was only $267,000,000, whereas it is now in excess of a billion dollars, an increase of 300 per cent in twenty years, with a corresponding increase in investment. The ramifications of the business are such that a shift now means something. We have grown from a local market industry, to one which must consider not only the National situation, but the International as well.

The South and the West Coast

Probably the most recent regional developments are those in the South and on the West Coast. These developments have affected every branch of the industry. The one branch of the industry which has been least affected is the fine writing and ledger papers. Two locations, one in Massachusetts and Connecticut and one in Wisconsin are the centers of the regional development of this branch of the industry. There has been no major expansion program in these grades in recent years.

One reason for this is that there has been no great concentration of raw materials for their use which were a potential drug on the market as has been the case in wood papers. Fashions have changed and the effect is to limit the supply of suitable rags for their use. Had cotton and linen continued in as extensive use as during the Victorian period the business would undoubtedly have been badly overdone.

They have extended their uses and probably have the most stable situation of any branch of the industry. Sulphite bonds have supplanted some of their tonnage but the increasing uses of both grades have made it possible for the high grade mills to hold their own in this scramble of new developments, new uses, substitutions, regional shifts and all the other troubles incident to the paper business.

The extensive development in the South in the Kraft paper field has completely upset the wrapping and bag paper industry. An economic development which was bound to come in a country of low cost wood, long growing period which encourages reforestation and a continuous supply of timber, cheap fuel and cheap labor. Here again we have the same situation as in all other regional shifts, over building or over producing beyond the needs of the country. This situation is so far reaching as to even affect the practice of forestry in other sections of the country.

The situation in the south is a dangerous one, not only for the established mills but for those who are now contemplating new mills and additions to present properties. Prior to the beginning of this century regional shifts were slower, smaller units were gradually introduced, but today no one can think in units of less than one hundred to two hundred tons of daily production. Capital is plentiful or at least has been and the result is that regional development is quickly overdone, the market is highly competitive and the result is that the economic advantage of a new location and all that goes with it is quickly dissipated through too much development.

This flood of cheap production has brought about a selective selling job for mills making Kraft from slower growing woods in other localities. Given a breathing spell in construction this situation will eventually right itself, providing there are no other regional shifts to some section or to some raw material which will furnish more cellulose at the paper machine for a less dollar value.

The Influence of the Panama Canal

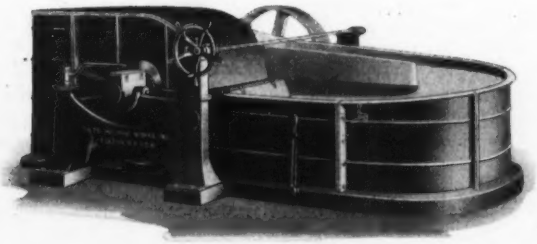
As a result of cheap transportation, particularly as relates to the Panama Canal and also to the extensive timber resources in that part of the country, the West Coast has recently developed into a new regional shift of production which will have its effect on practically all grades of paper.

Sulphite, both bleached and unbleached, and kraft production has increased materially and is finding its way back to the Central West and the Atlantic Coast. Every pound of new product produces a riffle on the surface conditions of the industry and unfortunately these riffles are permanent, one might almost say a permanent wave.

Cheap timber and cheap power in that section have combined to encourage capital to again over build for immediate needs. I do not believe that the industry has ever been faced with such a complex condition as exists today. Heretofore one might see a solution of the problem within a reasonable length of time, but today there seems to be a wild scramble on the part of established mills to gain economic position by increased production in low cost regions, even by moving to such regions, and by outside capital, not previously interested in the industry, but which has abundant raw material, to get into the game, apparently under the impression that this is a lucrative business and that there is no limit to the tonnage which can be marketed. In the West, I believe, that the amount of waste suitable for pulp manufacture is over estimated but there is a tremendous amount of timber suitable for the purpose.

As an example of what can happen in these regional developments and grade shifting, it would be well to consider the box board industry. A few years ago one would have said that there was no possibility of finding a cheaper raw material for the manufacture of test liner than a combination of kraft pulp and old papers. Old papers being about the lowest value of any waste material for paper making, one might think of. The same was true of straw as a corrugating material and yet the advent of kraft test liner at a reduced weight and of increased strength, and of neutral board made from chestnut chips from the tanning industry, has seriously affected both the so-called jute liner and straw formerly used in the container industry. Everyone is struggling with research problems all tending to decrease costs and bring about more regional shifting.

What is to be the outcome of all this? People engaged in the industry have been up against the same thing for nearly three

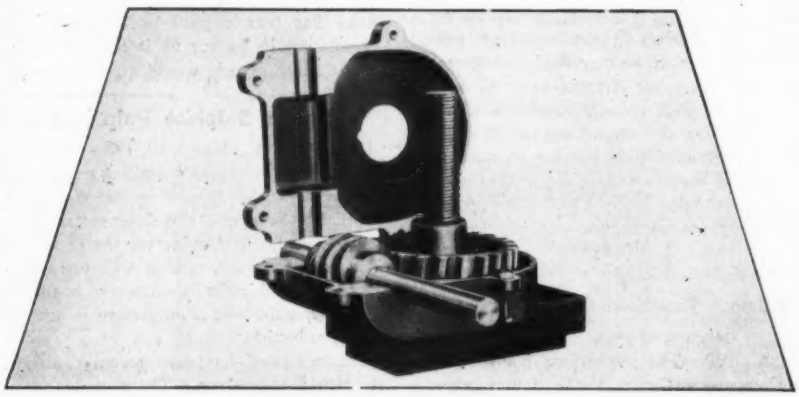


- WHY -

DILTS NEW TYPE BEATING ENGINES

mix more thoroughly, do their work faster and more economically than others.

This is the third of a series of advertisements, picturing some of the reasons—features, in design and construction—which make Dilts New Type Beating Engines most suitable for your Beater Room requirements . . . *Ask for additional data.*



DILTS LIGHTER STANDS are equipped with worm and gear running in a dust-proof oil case. The gear is supported on BALL BEARINGS and the Roll adjustment is thus made easy.

DILTS MACHINE WORKS INC.
FULTON, N. Y.
"Your Paper Is Made In Your Beaters"

thousand years and have managed to muddle through and that is probably what we will do. Some will suffer severely and the economics of the problem will eventually prevail. The fellow who produces and delivers satisfactory paper or board at the lowest cost, from any source of cellulose, will dominate the market.

Whether we make money during all these regional shifts which in turn produce the harmful grade shifts, depends on how we handle our business. If we endeavor to operate these plants with some idea of keeping production in line with consumption, and using the information gained from association work as a guide to productive activity, there is hope of reward, but if this is allowed to run wild and it resolves itself into a "survival of the fittest" fight there will be many more regional shifts with their consequent harmful results. What we need is a "breathing spell." The action of one company cannot help the situation, it is the action of all which will count.

Intelligent Regulation

We need a moritorium in development and an intelligent regulation of productive activity during that period. Consumption must get up somewhere near to production before we start on another orgy of construction. With the technical knowledge and effort expended in this business and the constant urge of decreasing costs to meet this competition it is not unreasonable to suppose that those who now occupy the most favorable economic position may find themselves upset by new developments. The situation demands the closest cooperative work on the part of every one engaged in the industry and this should be through well organized association work. The fellow who becomes self satisfied and thinks he can play a lone hand and not be affected by what others are doing, is living in a greater fools paradise than has ever before existed. I would not venture predictions as to the allocation of certain branches of the industry in the future, but I am willing to hazard the guess that there will be more grade shifting in the next five years than during any previous five years and that we will need more intelligent cooperative effort than we have ever had if we are to make satisfactory return on our investment.

There will undoubtedly be considerable agitation for more regional associations. Regional associations may deal with certain things in relation to production costs but it requires group associations of national scope to deal with specific problems of that group, and furthermore, it requires the strong organization and liberal support of the national association if we are to have the contact with each other and the service required for the intelligent handling of so complex a situation. I respectfully urge you to support the constructive agencies which are working for our benefit.

Making Bathroom Tissue at Camas

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., March 6, 1930.—The converting plant of the Crown-Willamette Paper Company at Camas, Wash., is now manufacturing bathroom tissue in its new unit, thus adding a new product from the Pacific northwest for national distribution.

One of the largest campaigns of national advertising for such a product will soon be started as the mill will have produced by March 1 a total of 1,000,000 which will be in the hands of retailers and jobbers before the campaign breaks. Two brands are being manufactured. The National Paper Products Company, a subsidiary of the Crown-Zellerbach Corporation, is distributing the product.

Fifteen tons of the tissue are being turned out daily at the plant at Camas, but it is stated that this output will be doubled shortly. Seven machines are already installed and five more will complete the roll battery. In addition there will be installed 20 to 24 package machines for flat bathroom tissue and a battery of ten roller towel machines.

Want Reduced Rates on Northern Lines

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., March 10, 1930.—A request for a reduction of freight rates on northern lines of the New York Central Railroad in order to equalize them with the main line rates was made by Joseph A. Quinlan, traffic manager of the St. Regis Paper Company, when he testified this week at a hearing before the Public Service Commission in New York City. He contradicted testimony given in hearings at Albany that the branches of the railroad north of Oswego, Camden and Rome are operated at a higher cost than the main line and lines south of the main line. Denying the statement of H. M. Bassett, comptroller of the New York Central, who said these lines cost more to operate, Mr. Quinlan declared that they were actually run more cheaply. He also said that shippers in Northern New York want the same treatment so far as freight rates are concerned as the rest of the New York Central shipping system.

E. W. Skinner, vice president of the Hudson branch of the Oswego Falls Corporation, testified that increased rates on his company's products, paper containers, would result in increased cost to the consumer.

The outstanding feature of the proposed new rates is their extreme high level. The rates proposed are considerably higher than those recommended by the Interstate Commerce Commission and if approved will saddle on the shippers an additional transportation burden of approximately $40,000,000.

Officials of the Associated Industries of New York State held conferences with Chamber of Commerce organizations in this section during the past few weeks relative to fighting the proposed new rates. It was said that the class freight rate case began in 1922 when the railroads proposed a change in the scale of rates. The shippers and manufacturers began an opposition before the Public Service Commission in this state which was later taken up by Associated Industries, a combination of 2,300 industries organized for their protection in every way possible.

The increase in rates as proposed would, it was stated, effect an increase averaging thirty-five per cent of the present costs and might also mean the elimination of many smaller industries. The matter has been argued many times before the Public Service Commission in so far as it applies to this state and a decision against the railroads would go a long way in settling the matter.

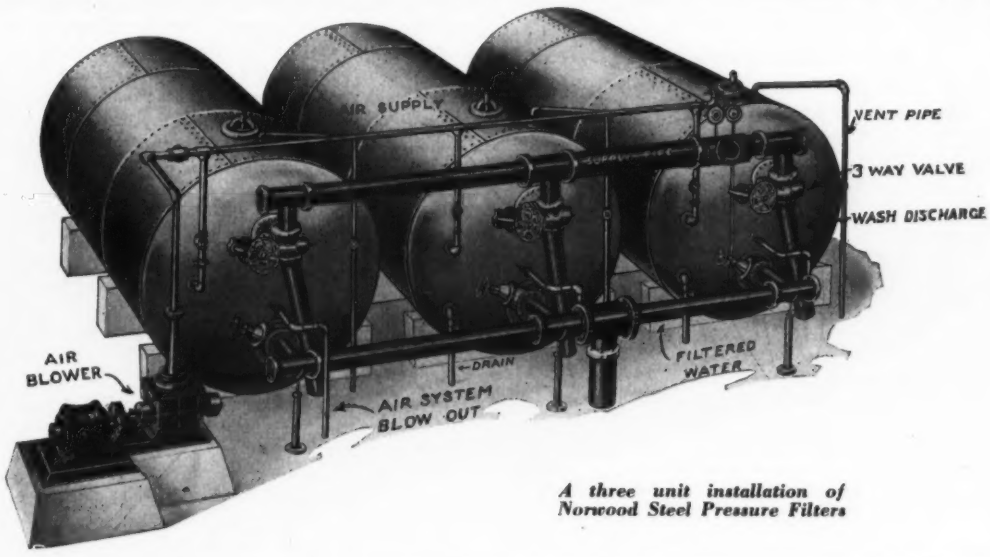
Dexter Sulphite Pulp Makes Improvements

DEXTER, N. Y., March 10, 1930.—The Dexter Sulphite Pulp and Paper Company is now installing new equipment and making other improvements which will enable a large increase in production. Installation of a new bleaching system will be completed in a few weeks in order to provide for the production of a new high grade of bleached sulphite which will turn out about twenty-five tons daily. Up to this time the concern has not turned out any bleached sulphite but the new arrangement is not expected to interfere with other production.

The company has also recently installed a new machine of Swedish manufacture. The new machine has been in operation since last summer although full production was not reached until this week. An engineer from Sweden has been stationed at the plant for the past few weeks making necessary adjustments and it is expected that it will turn out maximum production from now on.

It has a total production of eighty tons of pulp daily and of this amount thirty-five tons is used in the making of paper for the firm's bag department. The remainder is disposed of to other manufacturers. The machine was purchased through the Paper Machinery, Ltd., Canadian representatives of the Swedish firm.

Full time operations are under way and it is the opinion of officials that the present production of eighty tons of pulp daily will be increased within the next few weeks. The company has already appropriated a considerable expenditure in modernizing its plant and the results are already noticeable.



A three unit installation of Norwood Steel Pressure Filters

Will your plant be prepared when Spring comes—with its freshets and high water filled with dirt and debris? Will your plant continue production on an even schedule or will you have partial shut-downs due to unusable water? High water, low water and dirty water periods hold no worries for the mills equipped with Norwood Filters, for they know that all dirt, leaves and other foreign matter will be perfectly filtered out. Only clean water enters into the making of the paper, resulting in uniform quality. Machines are not plugged or damaged—continuous operation is possible. Norwood Water Filters have many advantages and exclusive features. Investigate them now!

You can't go wrong with an installation of Norwood Filters, Calenders, Platers, Dusters, Rag Thrashers, Folding Machines, Suction Boxes or other equipment.

Write today for Norwood Filter Catalogs, or write us about your water filtration problems. Norwood Engineering Co., 17 North Maple Street, Florence, Mass.

NORWOOD

Obituary

Walter Robert Wheaton

Walter Robert Wheaton passed away at Appleton, Wis., February 21, 1930. He was born in Worcester, Mass., January 23, 1882, where he attended the High School, and later was graduated from the Worcester Polytechnic Institute as a civil engineer. In college he was active in athletics and was on the football team and the boat crew. He entered the United States Forest Service in 1905, where he was interested in the engineering uses of wood and especially in the development of new methods for the preservative treatment of timber, and in the design of plants suitable for the treatment of poles and cross ties.

From 1906 to 1908, he represented the United States Forest Service as manager of a large cooperative project in California, participated in by a number of the large California Public Utility Companies. It was the object of the investigation to determine practical methods which would increase the service life of the poles and ties used by these concerns, and also make it possible for them to utilize the timber from their own forest lands, which timber was largely of the non-durable species. As a result of the investigations, new methods of treatment were worked out, and new types of pole treating plants designed. These methods were almost immediately put into effect throughout California, and later at many other points.

Mr. Wheaton left the government service to go into private business, organizing the Western Timber Treating Company. He married Georgia Whittaker, of Los Angeles, in 1908, and they had their home in Fresno, Cal., and later in Sacramento, Cal. In 1915, he became general manager of the Pulp Wood Company, and moved to Appleton, Wis., the headquarters of this firm. He held this position until his death. Here he was in charge of the Pulp Wood Company's extensive buying operations in Wisconsin, Michigan, Minnesota, and the Province of Ontario.

In Appleton, Mr. Wheaton took a prominent part in social and civic activities. He was a Mason and Shriner. He also retained a keen interest in all forestry matters and took a leading part in securing the passage of the Wisconsin Forest Crop Laws of the 1927 and 1929 Legislatures. This is considered the most advanced legislation passed by any state to encourage forestry practice. Over 300,000 acres of land in Wisconsin have been registered under these acts.

Mr. Wheaton is survived by his wife and one sister, Mrs. Allan Niles, of South Portland, Me. Funeral services were held at the Masonic Temple in Appleton on February 24. Interment was in Los Angeles, March 1.

News of the Boston Paper Trade

BOSTON, Mass., March 10, 1930.—A new sample book of Georgian, made by the Worthy Paper Company, makers of fine papers, Mittineague, Mass., and sold by Arthur E. Ham & Sons, has been issued. The book, which shows the adaptability of these papers to modern trends in advertising, is printed on sheets of white and the eleven shades, arranged in swatch form, or what might be called a double-swatch form. The cover is red and the pages of white, ochre, ivory, taupe, yellow, green, verde, Aztec, tropic, blue, gray and red. Striking illustrations from one-, two- and three-color line plates and also printed by the water-color process are a part of the book's attractiveness. They include a cut of the mill in its picturesque New England setting of river and hills and a map for the visitor who comes by motor. The book contains a brisk, but interesting history of papermaking and a description of paper making at the Worthy mill. In the last half of the book are listed sizes and weights of the respective papers.

Mr. Fairbanks and Mr. Gasparinetti were in Boston last week in connection with the hand-made papers which are to be handled here by Storrs & Bement Company. They visited some of the artists and printers. The entire line of papers was very favorably received. One man remarked that he thought it was the finest and most complete line of hand-made papers he had ever seen. Mr. Gasparinetti, who is working with Mr. Fairbanks on the proposition, is a representative of both Italian and English mills and expects to be in this country about a year.

The Hon. Frank G. Allen, Governor of Massachusetts, and the Hon. Herbert Parker, chairman of Massachusetts Bay Colony Tercentenary Committee, are to be guests at the Forty-fourth Anniversary Banquet of the Boston Paper Trade Association March 19 at the Algonquin Club. The election of officers for the ensuing year will be held and a number of applications for membership will be acted on. The reception will be at 6 o'clock and the banquet at 6:30.

T. M. Dix, vice president of the Spaulding & Tewksbury Company, box board dealers, leaves this week on a business trip to Philadelphia, Washington and Norfolk. Mr. Dix will drive to New Haven and make the rest of the trip by rail and water. L. B. Tewksbury, second vice president of the same company, has returned from a business trip to Providence, where he stayed several days. E. M. Davenport, treasurer of the company, accompanied by Mrs. Davenport, has gone on a ten-days trip of combined business and pleasure to New York and New Jersey.

Distributors of Adirondack Bond and Adirondack Ledger have announced a reduction in price so that the White Bond now sells at 11 cents a pound and the White Ledger at 12 cents a pound.

Reports from Max Frank, of John Carter & Co., Inc., who has been ill more than a year, are very encouraging.

Harrie E. Waite, merchandise manager for John Carter & Co., Inc., who has been confined to his house for several days by illness, has returned to the office.

E. C. Walker, Holyoke, Mass., sales manager for the Collins Manufacturing Company, manufacturers of Active Bond, called on the trade last week.

Waste Material Dealers to Convene

The Seventeenth Annual Meeting of the National Association of Waste Material Dealers, Inc., at which there will be elected a president and fifteen directors, will be held at the Hotel Astor, New York, on Wednesday, March 19, at 2 p.m.

In spite of the business depression which the industry is experiencing at the present time, indications are that the attendance at the annual meeting this year will be fully as large as on any preceding similar occasion. Substantial delegations are coming to the convention from Western and Southwestern points, and the South will also be well represented.

Many large industrial and public utility corporations producing waste materials will be represented at the meeting and such an occasion affords an excellent opportunity for both dealer, producer and consumer to talk over their various problems and profit by such discussions as take place at the meetings.

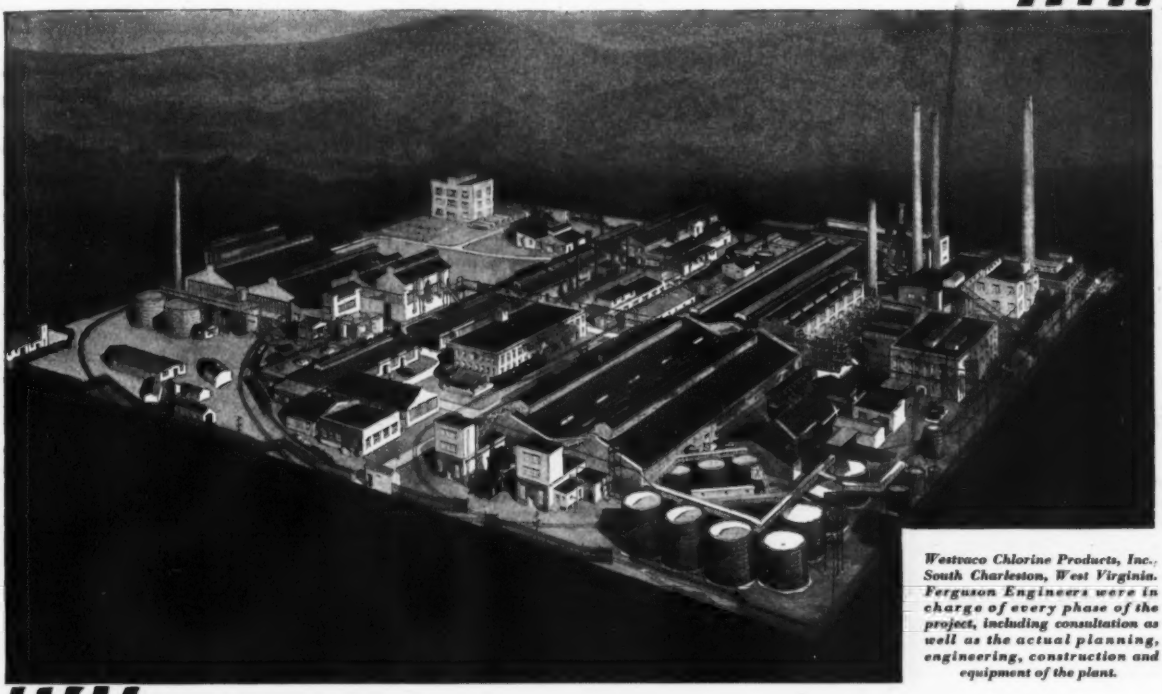
The Seventeenth Annual Banquet of the association is to be held in the Grand Ballroom of the Hotel Astor, New York, on Wednesday evening, March 19. The Banquet Committee, headed by H. H. Cummings, is making preparations which promise to make the affair in every way a success.

It will be remembered that a year ago on the occasion of the Sixteenth Annual Banquet, the affair was held in Chicago and proved that successful banquets could be held by the association outside of New York. This year, Western members are going to make a special effort to attend in order to show their appreciation for having had the banquet in the West last year.

Spencer-Wynne Receiver Appointed

The Irving Trust Company has been apointed Receiver in the case of the Spencer-Wynne Paper Products, of New Windsor, N. Y. The company operates a plant which is subject to mortgages amounting to $250,000.

A world's record promised . . . and made



Westvaco Chlorine Products, Inc., South Charleston, West Virginia. Ferguson Engineers were in charge of every phase of the project, including consultation as well as the actual planning, engineering, construction and equipment of the plant.

WHEN Ferguson Engineers designed a new extension to this huge chemical works they promised a rate of efficiency which was higher than any known standard. The plant, now completed and in operation, has established a world's record of efficiency for its own highly specialized type of manufacture.

Accomplishments like this are possible only because the experience of Ferguson Engineers has taught them to approach every plant project from the manufacturer's view-point—*dividends on the investment.*

This one organization, including architects, engineers, builders, carries the work through from inception to completion—quickly and economically.

THE H. K. FERGUSON COMPANY

Hanna Building · Phone CHerry 5870 · Cleveland, Ohio

Ferguson

ENGINEERS

NEW YORK · CHICAGO · BALTIMORE · DETROIT · BIRMINGHAM
TOKIO, JAPAN · TORONTO, CANADA · MEXICO CITY, MEXICO

Each month, 8,000 of the country's leading executives are reading the Ferguson Cross Section—a magazine dealing with timely engineering and business topics. A request on your letterhead will bring it to you gratis.

New York Trade Jottings

Milton L. Smith, of the News Print Service Bureau, was operated upon for appendicitis last Thursday. His many friends will be glad to learn that he is progressing nicely.

* * *

Percy B. Wilson, chairman of the News Print Institute of Canada, and his wife, spent a few days in New York last week on their way home from Bermuda, where they spent an enjoyable holiday.

* * *

The Annual Dinner and Entertainment of the Paper Association of New York City, for paper distributors, manufacturers and employees, will be held on Thursday evening, March 27, at 6:30 o'clock, at the Arkwright Club, 320 Broadway, New York.

* * *

Lily-Tulip Cup Corporation has declared the regular quarterly dividend of 37½ cents on the common stock, payable March 15 to stock of record March 8 and the regular quarterly dividend of $1.75 on the preferred, payable March 31 to stock of record March 8.

* * *

The Cotton Rag Division of the National Association of Waste Material Dealers, under the Chairmanship of David Charak, will hold an interesting meeting at the Hotel Astor, New York, on Tuesday, March 18, at 10:30 a.m. All members interested in any branch of the cotton rag industry are urged to attend.

* * *

The annual meeting of the Waste Paper Division of the National Association of Waste Material Dealers, will be held at the Hotel Astor, New York, on Tuesday, March 18, at 11:30 a.m. An interesting program for this meeting is being planned and all members handling waste paper are urged to attend. Robert F. Graham is chairman of the division.

* * *

A meeting of the Foreign Trade Division of the National Association of Waste Material Dealers, has been scheduled for 12 o'clock noon, on Tuesday, March 18, at the Hotel Astor, New York. The meeting will be in charge of Carlton B. Overton, chairman of the Foreign Trade Division, and members interested in problems connected with foreign trade are requested to attend.

* * *

Harry Elias & Co., general paper merchants, of 19-21 Seventh avenue, New York, have been appointed sole selling agents in the metropolitan area for the Comet brand of sealing tape, which is manufactured by the McLaurin Jones Company, pioneers in the gummed tape industry. A large stock will be carried in New York City for quick service to the jobbing trade, who have a demand for a good, medium priced gummed tape.

* * *

Frank E. Floyd, secretary of the National Paper Trade Association, gave an interesting and instructive address on "Co-operation Between Manufacturers and Merchants" at the regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry, last Monday, at the Fraternities Club. Mr. Floyd's address was greatly appreciated by those present and was followed by a spirited discussion.

* * *

Granting a contention of the Tait Paper and Color Company, Inc., and the Standard Wall Paper Company, the Customs Court reaches the conclusion that certain imported print rollers, taxed at 60 per cent ad valorem, under Paragraph 396, Act of 1922, should have been assessed at only 30 per cent ad valorem, under Paragraph 372. Chief Justice Fischer writes the decision in the case.

* * *

Olof Dymling, manager of the Stockholm office of Jacob Versteegh, correspondent of J. Andersen & Co., pulp importers, of 21 East 40th street, New York, and Hans Undén, engineer of Nensjöö Cellulosa A.-B., Sprängsviken, Sweden, have arrived in New York, and will spend several weeks in this country studying business conditions and inspecting some of the leading paper mills in North America.

Eagle-A Announcement Association Meets

A group of thirty distributors from all parts of the country were in attendance at the annual meeting of the Eagle-A Announcement Association at the Hotel New Yorker, New York City, February 18, 1930. A business session followed luncheon.

A feature of this meeting was an elaborate and beautiful display presented by the American Writing Paper Company, Inc., showing a number of new lines of paper.

An advance copy of the new sample book of "Eagle-A Advertising and Announcement Papers" was given to each member in attendance. This book, a handsome, blue leatherette loose leaf binder contains individual sections showing thirteen different grades of paper with an assortment of standard envelope sizes in each grade. It was announced that the new sample books would be ready for distribution to printers after the first of March.

Much enthusiasm for this attractive sampling unit was evidenced. A number of the country's leading printers and designers have contributed to its preparation. The individual units are handsomely printed, many of them in three or four colors. It is replete with suggestions and ideas for creative advertising and printing. With it a convenient electrotype service of practical and useful illustrations is offered to paper users.

Ralph Collins of Marquardt, Blake & Decker, Inc., was elected to serve as president of the Association and will occupy the chair vacated by the former chairman, C. W. Dearden of Rourke-Eno Paper Company, Hartford, Conn.

Names of officers for the ensuing year follow: President—Ralph Collins, Marquardt, Blake & Decker, Inc., New York City; first vice-president—R. M. Beckwith, Minneapolis Paper Company, Minneapolis, Minn.; second vice-president—Ben Johnson, the Whitaker Paper Company, Pittsburgh, Pa.; third vice-president—L. H. Thompson, Garrett-Buchanan Company, Philadelphia, Pa.; secretary—Richard F. Linsert, American Writing Paper Company, Inc., Holyoke, Mass.

More Inquiries in Indianapolis

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., March 10, 1930.—The volume of inquiries for papers of most kinds in this section is about the one encouraging feature of the market just now. Sales seem to be restricted to immediate needs and these needs are none too heavy even for this time of the year. The consumers seem to be buying only for the present. The inquiries, however, are increasing in volume and most of the leaders of the local trade are confident business will take on new life shortly.

With the approach of spring and the coming of better weather during the past week, demand for building papers is increasing somewhat. Stocks in the hands of the dealers are not heavy and any increase in building finds an immediate response from the building material and lumber dealers.

Local paper stock men say there is a somewhat better demand for the better grades from the mills. They believe this will increase some as the spring season advances, but say prices have shown no upward tendency. Board demand is only fair with some curtailment seen in production, but little change in prices.

Specialties and the fine papers seem to be in fair demand. The approach of Easter has caused some increase, with announcements, special wrappings for Easter candies and the like. Demand for glassines is good and shows promise of increase as more and more uses are found for these grades. The bakery demand is more and more encouraging, with additional bakers in the state using papers of this sort particularly for their pastries.

Other wrapping demand is fair. News print is about average with last year, but no unusual contracts have been reported.

Power behind the KNIFE—

Protection from its Edge

YOU may consider power behind the knife the most important element in paper cutting. True it is vital to the operation; but just as necessary as this power is adequate protection from the knife's edge.

Seybold, in its 49 years experience in building cutters, has always considered the safety of the operator. In its manufacture of fast and powerful cutters, honored throughout the paper industry for their dependability and accuracy, Seybold has constantly endeavored to protect the operator as well.

The two hand control lever and the safety washer are specific examples of this.

Call a Seybold representative and let him show you why you should consider the Seybold Cutter.

This safety washer, between the drive shaft and operating parts of the machine will separate the knife from the driving power when overloaded. Easily replaced.

This two hand throw-in lever, furnished upon request, requires that the operator use both hands in starting the machine.

Keep the knives accurately ground to a correct bevel with this new Seybold Grinder. Cutters and Trimmers do better work. Write or Circular No. 2215.

Harris-Seybold-Potter Company
SEYBOLD MACHINE COMPANY DIVISION
DAYTON, OHIO

Eastern Sales Agents: E. P. LAWSON COMPANY, INC., 424-438 W. 33rd St., New York, N. Y.
Southern Sales Agents: J. H. SCHROETER & BROTHER, Atlanta, Georgia
Western Sales Agents: CHAS. N. STEVENS CO., 112 W. Harrison Street, Chicago, Illinois

SEYBOLD paper cutters

The Automatic Cutter embodies every desirable feature for safe, accurate, rapid, easy, and economical cutting of paper. Sizes: 32, 34, 38, 40, 44, 50, 56, 64, 74, 84, and 94 inch.

HARRIS · SEYBOLD · POTTER

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Richvale, Cal.—The Pacific Coast Pulp and Paper Corporation has work under way on proposed new local mill for the production of pulp and paper products, using grapevine waste as raw material. Plant will consist of a group of eight one-story, steel and concrete buildings, with power house, 50,000-gallon steel water tank on 100-foot steel tower, and other operating facilities, estimated to cost about $250,000, with machinery. General contract was recently let to the Charles S. Mabrey Company, 1001 41st street, Sacramento, Cal. E. C. Swan, Portland, Ore., is engineer.

Monroe, Mich.—The Consolidated Paper Company, East Elm avenue, has plans nearing completion for proposed new storage and distributing plant to replace a unit destroyed by fire a number of weeks ago, and it is understood will ask bids on general contract at early date, entire project reported to cost close to $150,000, with equipment. Forster, Wernert & Taylor, Nicholas Building, Toledo, Ohio, are architects and engineers.

Newark, N. J.—The American Paper Company has been organized with a capital of $50,000, to take over and expand the local company of same name with headquarters at 33 Court street, distributor of paper stocks of various kinds. The incorporators of new company include William E. Haver, Bedminster, N. J.; and Charles H. Blatt, Maplewood, N. J.

Hattiesburg, Miss.—The Hattiesburg Chamber of Commerce is interested in the establishment of a local pulp and paper mill, and is reported to have negotiations in progress for such a plant. A committee has been appointed, headed by W. J. Morris and L. L. Major, to perfect details for the project. It is understood that the initial plant will represent an investment of over $200,000.

Bucksport, Me.—The Maine Seaboard Paper Company, Augusta, Me., recently organized by officials of the Central Maine Power Company, is said to be arranging the early erection of superstructure for initial units for proposed new local pulp and paper mill, and will push the project to early completion. The plant is to be equipped for a capacity of about 270 tons of news print per day, and is estimated to cost close to $8,000,000, with machinery. George F. Hardy, 309 Broadway, New York, is engineer for the work. In connection with this development the Central Maine Power Company will proceed with the construction of a hydro-electric generating plant on the Kennebeck River, near Bingham, for which plans have been completed. The unit will be used in part for service at the paper mill, and is reported to cost more than $2,500,000. The Morton Tuttle Company, 31 St. James street, Boston, Mass., has the construction contract for both projects.

Lititz, Pa.—The United States Envelope Company, Lititz, is said to have plans nearing completion for construction of proposed new mill unit, consisting of a one-story structure, reported to cost approximately $200,000, with equipment. J. H. Wickersham, Appel Building, Lancaster, Pa., is architect and engineer in charge.

Chillicothe, Ohio—Plans have been perfected for a merger of the Mead paper mill interests, recently referred to in these columns, under the name of the Mead Corporation. The new company has been chartered with an authorized capital of 500,000 shares of preferred stock, and 1,000,000 shares of common stock, no par value, and will take over and operate the Mead Pulp & Paper Company, Chillicothe; Mead Straw Pulp Company, Chillicothe; Mead Fibre Company, Kingsport, Tenn.; Mead Paperboard Corporation and the Management, Engineering & Development Company, Dayton, Ohio. Present plants have a combined output of about 360 tons of finished papers a day, including magazine, book and coated stocks. It is understood that the new organization in connection with unified management, will later carry out an expansion and improvement program for increased output; work recently has been placed under way to this end at the Chillicothe plant, and new units will be made available at earliest possible date. The Mead Paperboard Corporation is a holding company, now owning and operating a group of eight plants, largely devoted to the production of tannic acid; these plants are located at Lynchburg, Radford, Waynesboro and Wamascus, Va.; Knoxville, Newport and Harriman, Tenn.; and at Sylva, N. C. George H. Mead is head of the new organization.

Berlin, N. H.—The International Paper Company, New York, has closed its local mill, effective March 8, for an indefinite period, releasing about 375 men. No reason has been announced for the curtailment at this plant. It is understood that other New England mills of the company will be continued in service.

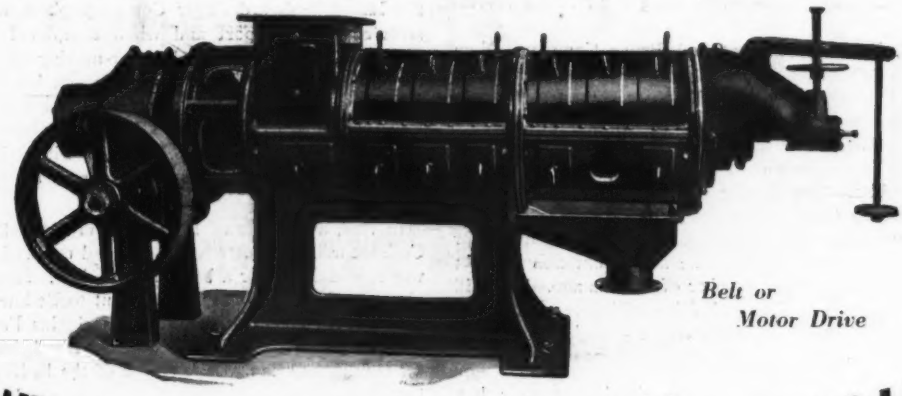
Brooklyn, N. Y.—The Albee Paper Box Company, care of Nathan Weiss, 1351 East 94th street, Brooklyn, recently organized by Mr. Weiss and associates with capital of $20,000, is said to be planning the early operation of a local plant for the manufacture of folding paper boxes and containers. David Fishman, 1138 Rogers avenue, Brooklyn, is also interested in the new organization.

Wellsburg, W. Va.—The Harvey Paper Mills Company, Wellsburg, has work under way on a new one-story addition, 95x240 feet, to be equipped for the manufacture of paper bags, estimated to cost approximately $200,000, with equipment. General contract recently was let to the Austin Company, Euclid avenue, Cleveland, Ohio. It is proposed to have the new unit ready for production at an early date, and capacity output will be developed. The company is operated under the direction of the Pillsbury Flour Mills Company, Minneapolis, Minn.

Lewistown, Pa.—The Viscose Company of America, Inc., Marcus Hook, Pa., has completed plans for the construction of a new addition to its mill at Lewistown, to be one-story, 267x397 feet, reported to cost upwards of $250,000, with equipment. The Ballinger Company, Twelfth and Chestnut streets, Philadelphia, is architect and engineer.

Whippany, N. J.—The Agar Manufacturing Corporation, manufacturer of corrugated paper boxes, is said to be running at normal capacity at local mill, giving employment to regular working force and will continue on this schedule for an indefinite period. An expansion program will be carried out at the other mill of the company at Somerville, Mass., for increased capacity, reported to cost about $80,000, with equipment.

Carthage, N. Y.—The National Paper Products Company, a subsidiary of the Crown Zellerbach Corporation, San Francisco, Cal., will devote output of its new mill at Carthage, formerly the property of the West End Paper Company, to a new line of paper



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goods to be sold under the trade names of "Zee" and "Zalo," and it is expected to develop maximum output at an early date. The company has been remodeling and improving this mill for several months past.

Dalhousie, N. B.—The International Paper Company, New York, has begun production at its new news print mill at Dalhousie, on Bay Chaleur, using two 250-ton machines. It is proposed to continue these units on full capacity schedule until the summer, when two additional units of like capacity will be placed in service, developing an output of 500 tons per day.

Ocean Falls, Alta.—The Pacific Mills, Ltd., an interest of the Crown Zellerbach Corporation, San Francisco, Cal., has completed improvements in power facilities at the plant to provide for any water shortage in the future. The latter condition brought about curtailment at the plant a number of months ago. The mill is running on a capacity schedule with full working force, and will be continued on that basis for an indefinite period.

New Companies, Etc.

Brooklyn, N. Y.—The Ainslee Paper Stock Company has been incorporated with a capital of $10,000, to deal in paper goods. The company is represented by Benjamin Rosenblum, 26 Court street, Brooklyn, attorney.

Chicago, Ill.—The Audebert Wall Paper Mill, Inc., has filed notice of company dissolution under state laws.

Philadelphia, Pa.—The Reliable Sales Company, 2654 Kensington avenue, has filed notice of organization to deal in paper products. Herman Skaist heads the company.

New Bedford, Mass.—The New Bedford Paper Stock Company, 350 South Second street, has filed notice of organization, to deal in paper goods. John J. Gabell, 127 Florence street, New Bedford, heads the company.

South Glens Falls Plant To Close

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., March 8, 1930.—Announcement is made that all available stock at the South Glens Falls plant of the International Paper Company has been consumed ten days in advance of previous expectations which will result in suspension of news print manufacture on Sunday morning. While it was previously believed that about 150 men would be thrown out of work officials said that the majority of the machine workers will be given employment at the Fort Edward plant where book and specialty papers are produced. Two machines have been in operation since late in January after several weeks had been required to place them in good running order.

Superintendent Graham has announced that he will return to his former position in the plant at Three Rivers, Canada, and it is understood that orders call for the return of Frank Morris, head machine tender, to the Corinth mill of the company. The majority of the machine workers were brought here from other mills and some residents, who had been employed in distant communities, returned to their homes here. The plant of the Veldown Company, a subsidiary of International, has been operating with a reduced number of workers for several months.

Report of Taggart Bros. & Co.

[FROM OUR REGULAR CORRESPONDENT]

OSWEGO, N. Y., March 10, 1930.—In its annual report for the year ending December 31, 1929, the firm of Taggart Bros. & Co. shows a net income of $1,256,909, equivalent after preferred and other dividends to $1.61 a share on the common stock. The corporation was organized in 1928 through a consolidation of a number of companies in Northern New York and is regarded as one of the leading producers of paper bags in the country. The statement also shows current assets of $2,358,517 compared with current liabilities of $534,448. The surplus account of the company on December 31, representing the common stockholders' equity, amounted to $6,227,519 compared with $5,380,234 of the preceding year.

To Be Superintendent at Bucksport

Frank P. Silver, recently named general superintendent of the Maine Seaboard Paper Company plant, which will be constructed at Bucksport and when completed will be the most modern and best equipped paper-making plant to be built in the United States for the past 20 years, has been mill superintendent of the Cushnoc Paper Corporation in this city for the last three years says a press dispatch from Augusta in the *Press Herald* of Portland, Me. Mr. Silver is 36 years of age and he started his paper-making career at the Cushnoc plant, 23 years ago.

In 1907, at the age of 13, Mr. Silver entered the employ of the Cushnoc mill as a common laborer and received $1.50 a day, which was splendid pay for a boy, in those days. He stayed at the local plant for five years and in 1912 went to Bellows Falls, Vt., where he was back tender at the Black & Higgins Paper Company mill. After a year and a half he went to Big Island, Va., where for six months he was machine tender of the Bedford Pulp and Paper Company.

His next place of employment was at the Dixie Paper mills in Richmond, Va., where he was night superintendent. From there he returned to his native state and was located with the Great Northern Paper Company, at Madison as machine tender and later as tour boss. He was located there for eight years.

North Tonawanda, N. Y., with the Tonawanda Paper Company, as night superintendent, was Mr. Silver's next place of employment. Following that he was at River Bend, Quebec, with Price Brothers, paper makers, and was day boss. Coming to Augusta three years ago, after 20 years in various parts of the country, he took up his duties as mill superintendent.

Mr. Silver was born in Augusta at Pettigill's Corner, the son of Michael and Mary Silver, and attended the local schools, although he calls the Cushnoc paper mill his college. He married Miss Lou Willett of Bellows Falls, Vt.

There are three brothers, who are also in the papermaking business. They, like their brother, Frank P. Silver, started the trade at the Cushnoc plant. They are Edward Silver, mill manager at Abitibi Mills, Iroquois Falls, Ontario. James, who becomes superintendent of the Cushnoc mill when Frank Silver goes to Bucksport, and Samuel Silver, who is now employed at the Cushnoc mill.

Last week Mr. Silver was presented with a wrist watch from the employees at the Cushnoc paper mill. The gift was accompanied with expressions of best wishes in his new field of endeavor.

News of the Chicago Trade

The Eighth Annual Midwest Safety Conference, under the auspices of the Chicago Safety Council, will be held on Tuesday, March 18, all meetings to be at the Palmer House. A general session and sessions devoted to chemical and rubber, metals and metal working, petroleum, public utilities and transportation, street and highway traffic, woodworking and lumber manufacturing and an evening banquet are the high lights of the one day program. A special invitation has gone out to members of the paper box, box board and paper manufacturers in Chicago and Illinois to attend this interesting conference which will bring to Chicago a number of men noted for their work in the safety field.

The Cromwell Paper Company, 4801 South Whipple street, Chicago, has prepared plans for a one story brick addition to their plant estimated to cost $50,000. Bids are being received on the general contract. A. Epstein is the architect and engineer.

In Westvaco Inspirations for Printers, No. 51, published by the West Virginia Pulp and Paper Company, a year's advertising "passes in review" for the edification of the printing and advertising fraternity. Splendid pieces of advertising in the magazine, folder and catalog and billboard field are reproduced and discussed. How modernism and novelty played a part in 1929's program is also revealed. The issue is a distinct contribution to the advertising and printing field.

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LOCKWOOD'S DIRECTORY

of the

PAPER & ALLIED TRADES

CORRECTED UP-TO-DATE

The 55th Consecutive Annual Edition

THE OLDEST INDUSTRIAL DIRECTORY IN THE UNITED STATES

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Member A. B. C Audit Bureau of Circulations

Vol. XC New York, March 13, 1930 No. 11

FOREIGN PAPER TRADE

Exports of paper and paper products from the United States during January were in most instances below those of the corresponding month last year, although owing to heavy increases in a few of the leading items the aggregate value of such shipments, amounting to $3,434,294, registered a decrease of only $69,500, or 2 per cent, according to the Paper Division of the Department of Commerce. Compared with the month of December a somewhat better showing was made, fewer items showing a decrease in the quantity shipped, while the total value of such exports increased by 9 per cent.

Particularly heavy reductions occurred in the January shipments of surface-coated and writing papers, over-issue newspapers, and boxes. Exports of news print also declined by more than one-half as compared with December and were 14 per cent under the January, 1929, shipments. Less outstanding were the decreases registered in exports of greaseproof and tissue papers, sheathing paper, insulating and wall boards, hangings, bags, and vulcanized fiber.

Offsetting to a considerable extent the declines mentioned, increases ranging between 20 and 50 per cent were registered in exports of wrapping paper, boards, and such specialties as toilet paper, paper towels and napkins, papeteries, and envelopes. Exports of book paper also exceeded the December shipments by 20 per cent, although showing an increase of less than 5 per cent compared with the corresponding month in 1929.

In addition to the products mentioned, there was an exportation of paper base stocks from the United States during January to the value of $536,520, an increase of 54 per cent compared with the month of December, and of 18 per cent compared with January of last year.

A decrease was also registered in the total value of imports of paper and paper products into the United States during January, due largely to a decline in the volume of the January receipts of standard news print as compared with those of the month of December and in the average value of this particular product in comparison with the corresponding month last year. Aggregate receipts of other classes of paper and board rose 31 per cent in value as compared with the preceding month and 14 per cent compared with January, 1929. While imports of a number of items, such as "other" printings and wrappings, surface-coated papers, and boards declined, losses in these particular lines were more than offset by the increase in receipts of writings, kraft wrappings, tissue, cigarette, and wall papers.

Total receipts for the month were valued at $13,348,768, of which $11,675,042 represented 176,712 tons (long ton of 2,240 pounds) of news print, and $1,673,726 other papers and boards. Similar receipts during December were valued at $14,814,345, of which $13,540,746 represented 205,873 tons of news print, and $1,273,599 other paper and boards.

Imports of paper base stocks during January reached a total value of $11,606,682, an increase of 20 per cent over December and of nearly 15 per cent over January, 1929. Compared with a year ago, there was an increase in receipts of all items in this group except bleached sulphite pulp and waste bagging and paper, imports of mechanical ground wood and rags being 6 to 7 per cent higher, unbleached sulphite pulp 19 per cent, and kraft pulp 40 per cent. Imports of kraft pulp, unbleached sulphite, and pulpwoods also exceeded those of December, while ground wood receipts declined by 20 per cent and rags by 5 per cent. Incoming shipments of bleached sulphite pulp during January were 20 per cent under those received during either the preceding month or the corresponding month last year, and a like decrease was registered in receipts of waste other than rags compared with the month of December.

Of the total imports during the month of January, $9,285,466 represented wood pulps, $1,183,235 pulpwoods, $783,429 rags, and the remainder other waste stock, bleached sulphate pulp, and other classes of pulp.

TRADE ASSOCIATIONS

Trade associations, by observing the "rules of the road," can contribute materially to the promotion of better management in business was the opinion expressed by Dr. Hugh F. Baker, manager of the Trade Associations Department of the Chamber of Commerce of the United States and formerly secretary of the American Paper and Pulp Association, speaking recently before the National Management Congress at Washington, D. C.

"The rules under which trade associations can operate most effectively," he said, "have been rather generally defined today.

"Under our anti-trust legislation, made up of the Sherman Act, the Clayton Act and the Organic Act of the Federal Trade Commission," Dr. Baker explained, "there are three rules in particular which must be observed. Business men in their associations or out, so far as that is concerned, cannot get together and agree as to the price of their commodity or service. If we were to examine critically agreements for price fixing which have in the past been declared by the courts to be illegal, it would seem more than evident that it is not only illegal to fix prices but it is uneconomic and it never works for any length of time. Members of an association cannot agree to restrict production no can they allocate or divide sales territory. These three rules must be observed by associations both in letter and spirit.

"There are then other rules which must be observed as certain association activities are carried on. If a trade association is

operating a credit bureau it cannot set up a black list and distribute it promiscuously. If it is developing uniform cost procedure among its membership, an activity of very great importance, the members cannot agree as to the average cost of their commodity or service. If the association is developing facts as to the industry and presenting these facts in statistical form, which again is one of the most constructive things that can be carried on by an association, it must be careful to give these facts out as facts and not attempt to interpret their meaning for the membership. While the average association is much more concerned with what it can do rather than with what it cannot do, nevertheless the rules of the road which the association must travel should be most carefully observed."

Trees To Be Planted in New York

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., March 10, 1930.—About 10,000,000 young trees will be shipped from the state nursery at Lowville this year to be used for reforestation purposes in the northern counties, according to announcement from the Conservation Department. It is not expected that any planting will be done on the Lewis County state land this year, there being no more space available until the state comes into possession of the Hewitt properties. The state now has 42,000,000 trees ranging in age from one to four years at the Lowville plantation which is exceeded in size only by the Saratoga nursery, the latter being the largest in the world.

Several thousand letters have been sent out by the Conservation Department to persons in Northern New York who have made forest plantations in former years calling attention to the planting stock that will be available this spring and urging that orders be filed promptly. Many orders have already been received here from counties in Northern New York and these with other orders from various sections indicate a record breaking year in reforestation.

Records on file here show that Jefferson County ordered 219,000 trees last year as compared with 157,000 in 1928. Lewis County took 1,135,000 trees as compared with 1,089,000 in 1928, and St. Lawrence County 672,000 as compared with 582,000 two years ago. Franklin County led in 1929 due to the large amount of state land planting with 2,917,000 trees. Oswego County showed only a slight gain with 515,000 trees in 1929 and 513,000 in 1928. Until a few years ago Jefferson County had only been taking about 50,000 trees and rapid expansion in reforestation is now indicated.

Practically all of the four year trees will be distributed from the several state nurseries and about eighty per cent of the three year olds, according to the Conservation Department. Some communities prefer the two year seedlings but few of these are sent out. The big nursery at Lowville not only supplies most of Northern New York but some of the trees are also shipped to Erie and Monroe Counties to fill orders. A large number also go from the state nursery at Lake Clear Junction near Saranac Lake. About 10,000,000 trees were shipped from Lowville last year. The nursery covers about 75 acres as compared with about 250 acres at Saratoga where there are 48,805,000 trees.

The files of the Conservation Department shows that most organizations in Northern New York in ordering trees for planting prefer spruce, red pine or white pine with similar conditions holding good for practically all of the state.

Ground Wood Market Brisk at Oslo

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 12, 1930.—A cablegram from Commercial Attache Lund, at Oslo, reports that ground wood sales have been fairly brisk in Norway at unchanged prices. The chemical pulp market, on the other hand, has been rather dull for both bleached and unbleached varieties, and the demand for paper has likewise been unsatisfactory. M. G. cap mills are looking forward to a greater activity for their product in the Chinese market.

Freight Rate Service on Wrapping Paper

To fill a real need in the industry the National Kraft Paper Manufacturers Association, through O. M. Porter, manager, has arranged for a complete up-to-date Freight Rate Service on Wrapping Paper, through James H. Noble, Traffic Expert of New York City. The service covers:

1. All rail rates from all kraft Paper mills' shipping points to principal market points throughout the United States (Compiled and available).

2. Similar rates via rail and water routes (Now being compiled).

3. Rates by available transportation routes to additional competitive market points on request.

4. All changes in existing rates to the market points covered through supplemental sheets issued once a month, or oftener, as may be necessary.

The association's rate sheets are issued in mimeographed, loose-leaf form, bound in a serviceable and attractive binder, to facilitate keeping the compilation up-to-date as subsequent rate sheets are issued.

The advantages of this service are manifold:

1. It provides an immediately available, up-to-date and accurate compilation of all existing freight rates covering transportation from kraft mills to market points. This will serve as a handy, convenient manual that will indicate what competition may be expected in the various markets, as well as the market in which the various mills can sell at a profit.

2. It supplies immediate accurate rate information that may eliminate the cause of many difficulties, loss of business or profits, if properly used.

3. It gives the same information to merchants and converters as is available to the kraft paper manufacturers, thus tending to improve distribution relations between kraft mills and their customers.

4. It provides a handy manual for Operating, Traffic and Sales Departments for use in computing costs, making sales and checking rates.

No merchant or converter can afford to be without such a service. Its cost is negligible. The price is $25.00 for one year's subscription to the Association's Freight Rate Service. This includes one copy of its freight rate compilation for each subscriber, additional copies of which will then be furnished at $3.00 each. Supplemental sheets are issued for all copies sold.

Southeastern Superintendents Meeting Cancelled

RICHMOND, Va., March 11, 1930.—The Spring meeting of the Southeastern Division of the American Pulp and Paper Mill Superintendents' Association, scheduled to be held at Chattanooga, Tenn., on Monday and Tuesday, April 7 and 8, has been called off by Chairman R. J. Sprang, due to good reasons. It is announced that the Southeastern Division will hold a big Annual Fall meeting at Chattanooga, the date for which will be announced later.

New Pulp Mills Reported from Helsingfors

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 12, 1930.—Two large chemical pulp plants, one owned by the Enso-Gutzeit Aktiebolag (controlled by the State) and the other Veitsiluoto, owned outright by the government, are shortly to begin operation, according to a report from Consul James R. Wilkinson, at Helsingfors. The German Waldhoff company is also constructing a large chemical pulp mill at Kexholm in eastern Finland, and plans have been approved for the construction by British interests of another plant in northern Finland.

This new plant will have a yearly production of 60,000 metric tons.

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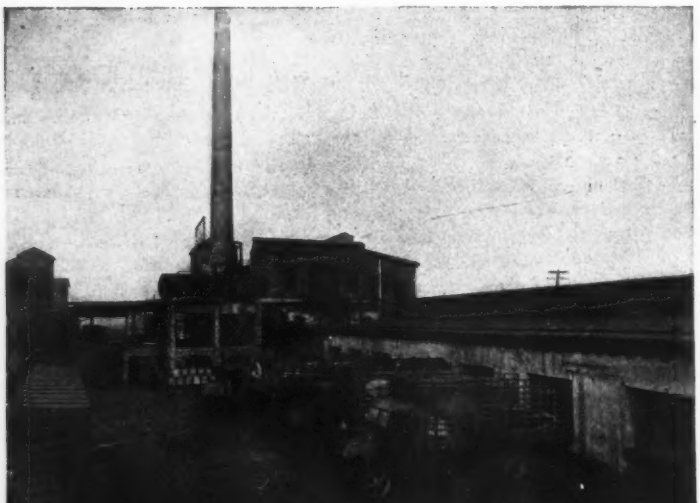

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

High Yield in Straw Paper Making *

By L. M. Booth[1]

The prime requisite for corrugating paper is that it shall be suitably stiff, so that when corrugated, the finished box shall be sturdy and at the same time sufficiently resilient to preserve the contents of the package from shock and damage. There are no fixed requirements as to color; different chemical processes naturally produce papers whose colors vary slightly. The present standard straw corrugating paper has a thickness of .009 inch and weighs 34 pounds per 1,000 square feet.

Until lately, straw for making corrugating paper and for straw board, has been almost universally cooked with lime. Most digesters are of the rotary globe type and are usually 14 feet in diameter. Recently, with a view to enhancing the stiffness of the paper, various combinations of other alkalies, such as sodium carbonate or caustic soda, have come into use as digesting chemicals. Sulphur and its compounds have been used as well. After digestion, the hot wet straw is dumped into the storage pit from which it is withdrawn for the beaters in the paper mill. The next standard procedure involved washing to remove the excess alkali remaining after digestion, as well as most of the non-fibrous substances. Inadvertently some of the fiber was also lost. This wash water constitutes the major item of stream pollution by straw mills. During and following the washing process the stock was beaten, then jordaned, and finally delivered to the paper machine.

From time to time various investigators, including technicians of the United States Government, have worked on the problem of disposal of this washer waste. All the efforts seem to have centered around the idea of disposal. In their work, no doubt, the scientists were guided by the papermakers, who at that time, contended that they wanted to be rid of such portions of the straw as they had been accustomed to wasting.

The outstanding difficulty in the way of destructive disposal is the large amount of material concerned. The United States Public Health Bulletin No. 97 (1918) is authority for the statement that the population equivalent for straw mill effluent is 1600 per ton of product. It is therefore apparent that the effluent from a 50 ton mill corresponds with the domestic sewage pollution contributed by a city of 80,000 population.

In 1927 the straw group of the Paperboard Industries Association expressed interest in the development of a process whereby the waste water from straw washing might be disposed of without nuisance to neighbors, especially those located down stream on the water courses carrying the straw mill waste. With the cooperation of this group and through the generosity of one of their members, the Hagar Straw Board & Paper Company, we were afforded the opportunity of demonstrating a new process at Cedarville, Ohio. Our work at Cedarville was undertaken with the idea of utilization instead of disposal. By following this utilization plan, straw paper was produced from the whole straw, i.e., without the loss and waste involved in the washing operation referred to above.

Application of Chemicals

Successive preliminary runs involved the gradual elimination of washing. The neutralization of the alkali and the coagulation portion of the process was first undertaken by batch application of chemicals in the beaters. Later chemicals were applied continuously. The points of application were changed from time to time, each change being made in order to delay the action of the acid coagulant. The most advantageous point of application was found to be at the flow box of the machine.

When paper was made from washed pulp by the old process, a liberal excess of digestion chemicals was necessary because practically no digestion was contemplated or effected in the beaters. Some of this excess was removed by washing previous to beating. The reason for this was twofold; first, it was necessary to get rid of the alkali and second, because of the difficulty of washing out alkali which had become fixed in the fibers by beating. With the amount of alkali which prevailed, even after washing, precipitate was deposited on wires and felts. Unless the pulp was very thoroughly washed, the paper became softened during storage, due to the action of the alkali which it contained.

In the new process smaller amounts of cooking chemicals are used, resulting in less drastic action on the straw. The hot straw, carrying the smaller residue of alkali from the rotaries, is delivered to the beaters. Washing is eliminated entirely, or materially reduced. The digestion process still continues at beater dilution. The stock is easily defibered at the prevailing higher temperature and in the presence of alkali. This procedure requires less time and less power than that with the old process and at the same time, long, tough fiber is produced. No troublesome solids are deposited, which require frequent souring of machine wires and felts, because the small amount of excess alkali is neutralized just prior to the delivery of the stock to the machine. When no alkali is present in the finished paper it retains its characteristic stiffness.

Chlorinated Copperas Coagulant

One suitable coagulant for neutralizing alkali is chlorinated copperas, a combination of ferric sulphate and ferric chloride. This may be cheaply prepared by the use of a solution feed chlorinator, together with a dry feeder for dispensing the ferrous sulphate. These substances combine chemically in the ratio of 1 part of chlorine to 7.85 parts of ferrous sulphate. Since straw pulp is readily decomposable, more chlorine than that shown in the above ratio is used in actual practice. This excess chlorine plays an important part in arresting decomposition and preventing the formation of slime. Straw paper made from unwashed straw has been

* Presented at annual meeting of TAPPI, Pennsylvania Hotel, New York, N. Y., Feb. 19, 1930.
[1] Member TAPPI; President, Booth Chemical Company, Elizabeth, N. J.

successfully made by the application of chlorine alone to the stock at the paper machine. By this use, however, the maximum economy of the process is not attained, since chlorine alone is not a substitute for aluminum or ferric compounds, the coagulating values of which are utilized.

Among the advantages incident to the use of this process are the following:

(a) The chemical action of digestion is less drastic because excessive amounts of chemicals are not required for cooking.

(b) The loss of stock is reduced, depending upon the extent of reduction of the washing.

(c) Coagulation of the stock at the paper machine retains in the sheet valuable materials which otherwise would be lost. A denser sheet is formed.

(d) Less steam is required for drying due to the fact that the presses squeeze out more of the water at the increased temperature prevailing throughout the system, from the beaters to the machine vat. This advantage is particularly noticeable in winter. The stock remains warm instead of being chilled as occurs when cold water is used for washing.

(e) Acid is rarely needed for souring the wire and felts because of the neutralization of the residual alkali content before the stock is delivered to the paper forming wire.

(f) Stream pollution is decreased depending upon the reduction of stock washing. Ordinarily 15,000, to 25,000 gallons of fresh water are used in the washing of stock required to make a ton of paper or board. If the washing is reduced (or eliminated entirely) the large quantity of water heretofore required for washing does not have to be provided, and the problem of disposal of the corresponding volume of wash water does not have to be considered.

Increase in Yield

In addition to the various operating economies referred to above, a noticeable increase in the yield results. Savings of from 500 to 900 pounds of straw per ton of paper produced have been reported.

It thus appears that the interest which the straw group of the Paperboard Industries Association displayed in stream purification has resulted in the modification of a time honored manufacturing process by eliminating the most wasteful step, namely, that of washing, which is largely responsible for the shrinkage sustained in this branch of the paper industry.

Contract for Water Wheels

The Beauharnois Power Corporation has awarded to Dominion Engineering Works, Montreal, a contract for water wheels. The Dominion Engineering Works competed successfully with Canadian, British, United States, German, Swiss, and Swedish firms. The many other bids, which came from the largest companies of their kind in the world, were all higher than that of Dominion Engineering. Official confirmation has been obtained from the Beauharnois Power Corporation of the award of the contract, which is in excess of $1,000,000.

The contract calls for four 50,000 h.p., and two 8,000 h.p., waterwheels together with the embedded parts for six more wheels. The two 8,000 h.p. units will be utilized for the generator exciters and for general plant use; together with the four 50,000 h.p. units they will go into operation by October 1, 1932. Further turbines, to bring the plant up to its initial capacity of 500,000 h.p. will be ordered from time to time.

For New Forest Products Lab.

Erection of a new building for the United States Forest Products Laboratory, Madison, Wis., came a step nearer last week when Chairman Haugen of the agricultural committee introduced into the house of representatives at Washington a bill appropriating $900,000 for this purpose. The University of Wisconsin has offered a tract of land for the laboratory, providing congress will authorize the structure.

TAPPI Notes

Donald E. Cable, formerly of the Oxford Paper Company, has gone with the Mechanical Rubber Company, Cleveland, Ohio. Doctor Cable will be connected with the fiber products department.

Hans V. Koskull, for several months a chemist at the Continental Paper and Bag Corporation, Rumford, Maine, has just gone to Finland, having obtained a position with Hackman & Company of St. Johannes.

Edwin A. Worm, Jr., has resigned from the Bureau of Tests of the International Paper Company, Glens Falls, N. Y., and has taken a position in the Research Laboratory of the Armstrong Cork Company at Lancaster, Pa.

R. Erik Serlachius is now manager of G. A. Serlachius A/B, Mantta, Finland. He was formerly with Kangas Pappersbruks A/B.

J. L. McClellan, who was with the National Vulcanized Fibre Company in Wilmington, Delaware, has joined the Hollingsworth and Vose organization at West Groton, Mass.

A. R. Grunwald resigned as sulphite superintendent of Lake St. John Pulp and Paper Company at Dolbeau, P. Q., to take a similar position with Maine Seaboard Paper Company at Bucksport, Maine.

James E. O'Connell has been transferred from the position of chief chemist, to sulphite superintendent of the Lake St. John Pulp and Paper Company at Dolbeau, P. Q.

Elwin J. Owens, assistant superintendent of the Erving Paper Mills, Erving, Massachusetts, has resigned to take a similar position in the mills of the George W. Wheelwright Paper Company at Leominster, Mass.

K. Maartman Moe has resigned as superintendent of Marma Sagverks A/B, Marmaverken, Sweden, and is now manager of Risor Traemassefabriker at Risor, Norway.

Arthur B. Green, consulting engineer of Portland, Oregon, is now located at Cumberland Mills, Maine, and is doing special work for the S. D. Warren Company. The Green beater control is now being handled by the Bird Machine Company.

The official rules for the sampling, weighing and testing of wood pulp for moisture have been revised by the Joint Committee on Approved Pulp Testing Chemists. Copies are available at 50 cents per copy. Orders may be sent to this committee at 18 East 41st street, New York, N. Y. There are no outstanding changes in the rules but many have been rewriften to clarify their meaning and the experience in the use of the previously published rules has led to their simplification and improvement.

Shut Down in Sweden Avoided

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 10, 1930.—The Commission appointed by the Swedish government to mediate between the paper mill owners and their workers has been successful in its efforts according to a radiogram from Commercial Attache Klath, at Stockholm, and shut down of the paper mills was prevented.

The agreement arrived at involves some increases in wages and changes in working conditions, and also the regrouping of mills under cost of living schedules. This will necessitate some further negotiations at the various mills, but the new wage contract must be finally ratified not later than March 20.

West Virginia Buys Timber Tract

[FROM OUR REGULAR CORRESPONDENT]

MECHANICVILLE, N. Y., March 10, 1930.—The West Virginia Pulp and Paper Company has purchased 2,100 acres of land in the northern part of Fulton County from Cyrus Durey, of Green Lake, according to a deed filed this week with the county clerk. The amount involved in the transaction could not be learned. The paper company already owns several thousand acres in Fulton and Hamilton counties, acquired from time to time in the past, and a section of the land included in the latest purchase adjoins that acquired a few years ago from the Dodge Clothespin Company.

The Cuprammonium Viscosity of Cotton Cellulose as Related to Papermaking*

By H. W. Bialkowsky[1]

The viscosity of cellulose in cuprammonium hydroxide solutions has been applied in research and control methods in many branches of the cellulose industry. It has been used in studying the nature of cellulose materials for the manufacture of explosives, artificial silks, pyroxylin varnishes, and in the textile industry. Clibbens and Geake of the British Textile Institute state that the measurement of the rate of flow of a solution of cotton in cuprammonium offers the most generally useful method for detecting loss of strength caused by chemical attack of cellulose in the bleaching and finishing of cotton textiles. "It is the only measurement at present known which indicates without conditions of ambiguity, tendering in cotton produced by chemical agency."[2] In working with nitrated cellulose, Small[3] found that there is a simple relation between the viscosity of the original cellulose in cuprammonium and the viscosity of the nitrated cellulose in suitable solvents. Clibbens and Ridge[4] have also shown that the fluidity (reciprocal of viscosity) of cotton in cuprammonium increases uniformly with decrease in tensile strength when the cotton is subjected to various forms of chemical attack, such as alkaline and neutral bleaching.

The method of making the measurement consists in preparing a cellulose cuprammonium solution by dissolving a certain definite quantity of cellulose in a standard hydroxide solution and then determining the viscosity of this solution. Ost[5] in his fundamental observations found that the viscosity of cellulose in cuprammonium was lowered after the cotton was subjected to chemical attack and that solutions of high viscosity degrade on standing, but 2 per cent solutions decrease very slowly in viscosity. Later work has shown that this degradation was due to air and light and all measurements are now made with the view of excluding air and avoiding direct light. About 2.3 grams of cellulose require about 1 gram of copper for solution and the solubility of cellulose in cuprammonium hydroxide solution appears to be only dependent on the copper concentration provided there is sufficient ammonia present and is independent of the viscosity of the solution.[6] The logarithm of the viscosity of a given cotton is nearly proportional to the concentration of the cotton in solution.[6,7]

Theory:

In a true solution each molecule of the dissolved substance is supposed to be separately surrounded by the solvent but in the colloidal solution of cellulose in cuprammonium solvent, it is not the individual molecules but the strongly bound, naturally occurring groups of molecules, called micelles, which are separated by the solvent. As the fiber is slowly degraded, these micelles are pulled apart before the molecules themselves become broken down. Therefore, in a treated sample the ratio of the average size of the micelles in the original fiber is an indication of the extent to which the initial degradation of the fiber has progressed. The test for alpha content of a fiber differs from this test principally in that it tells only the percentage of the fiber micelles which have reached a certain stage of degradation below which they are soluble in strong caustic soda but gives no indication as to the size of those micelles which constitute the alpha content of the fiber. In the rag fiber there is a wide range of possibilities between the original micelles and those soluble in caustic soda, but in wood pulp this range is so narrow as to be somewhat negligible.

Methods:

Several methods have been proposed for making the cellulose-cuprammonium viscosity determination. The earlier methods make use of especially designed pipettes and viscosimeter tubes, but at present the method most generally employed is the so-called falling sphere method.[8] As stated above, one of the chief experimental difficulties in making the measurement is the necessity of excluding atmospheric oxygen from the cellulose-cuprammonium solution during its preparation. In the falling ball method the solution is prepared in a special dissolving bulb, and the cuprammonium is brought in contact with the cellulose, under partial vacuum or in an inert gas atmosphere. The bulb is then placed on some kind of a shaking device until solution is complete and the solution is then transferred to the viscosimeter which consists of a glass tube about 10 inches long and ½ inch in diameter. The viscosity is then determined by measuring the rate of fall of standard glass or steel spheres through a given column of solution. This method is most suitable for very viscous solutions and in order to obtain such viscous solutions, concentrations of 5 per cent cellulose are usually necessary. Owing to the slowness of mixing in viscous media, the preparation of a homogeneous solution under these conditions occupies much more time or is less certain of accomplishment than with the more fluid mixture of lower cellulose content. Clibbens and Geake of the Shirley Institute, therefore, come to the following conclusion:

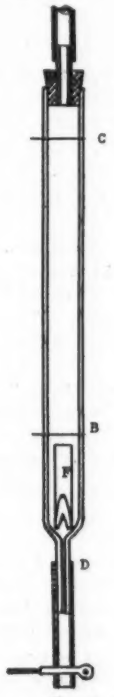

FIG. 1

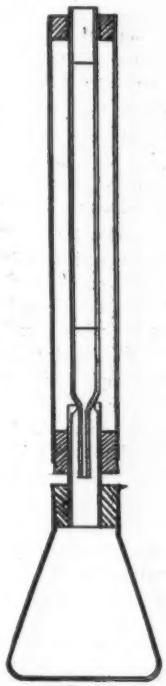
FIG. 2

"The use of the falling sphere viscosimeter for the examination of normally bleached cotton has introduced on this account alone

* Presented at annual meeting of TAPPI, Pennsylvania Hotel, New York, N. Y., Feb. 19, 1930.

[1] Research Chemist, American Writing Paper Company, Holyoke, Mass.

unnecessary difficulties and all measurements made in these laboratories are now carried out with a capillary instrument, using solutions of relatively low cotton concentrations." The capillary tube method of the Shirley Institute does not require any elaborate apparatus, can be readily applied to routine work and gives consistent results. The method of the Shirley Institute is described below with a few minor changes.

Method of the Shirley Institute

For the viscosity determination, use is made of a capillary instrument of a special type, the dimensions of which are specified within practicable limits. One of the chief experimental difficulties in making cellulose-cuprammonium viscosity determinations arises from the necessity of excluding atmospheric oxygen from any lengthy contact with the solution during its preparation. The cotton is dissolved in the viscosimeter itself, which is completely filled with the solvent to the exclusion of a gaseous atmosphere of any kind; and in order to procure a homogeneous solution, a short steel cylinder is included in the viscosity tube, which is made to travel continuously backwards and forwards when the latter is slowly rotated about an axis at right angles to its length.

A description of the capillary viscosimeter is shown in Fig. 1. The wide body of the instrument has an internal diameter of 1 cm. and a length of about 26 cm.; the lower capillary D is 2.5 cm. long, 0.090 cm. in internal diameter, and 0.6 cm. in external diameter. The wide portion is etched with two rings B and C at heights 6.2 and 24.2 cm. vertically above the flat end of the lower capillary. The upper end of the instrument is closed with a rubber stopper, carrying a second capillary of unimportant dimensions. Each viscosimeter is provided with a steel cylinder F, 2.7 cm. long, made from ¼-inch steel rod; the lower half is wedge shaped and notched as shown in the figure, and the weight is 5.5 ± 0.2 grams. The measurement is made with a solution containing 1 gram of dry cotton in 100 cc. of solution and for each instrument a record is kept of the weight of material required to yield a solution of this concentration when dissolved in the volume of cuprammonium necessary to fill the viscosimeter.

The sample for measurement is preferably finely divided, either ground or cut into small pieces (about 1/16 inch long) with scissors. After the lower capillary has been closed with a short length of rubber tubing and clip, the viscosimeter with weight in position is filled three-fourths full with cuprammonium, a few drops are run out at the bottom and the predetermined amount of sample added and mixed rapidly with the solvent by means of a thin glass rod. The viscosimeter is then completely filled with cuprammonium and the stopper inserted so that excess of the liquid displacing all air overflows through the top capillary and rubber tube. The latter is then closed by folding it back and fastening it securely against the capillary by means of wire. The tubing on the lower capillary is similarly closed. The tube is then wrapped in black cloth or paper and fastened radially to a wheel rotating at such a rate that during each half revolution the steel cylinder falls from end to end of the liquid column. The agitation produced in this way by overnight running ensures complete and homogeneous solution of the cotton; a wheel rotating at a maximum rate of 4 revolutions per minute being suitable even for the most viscous solutions encountered.

In order to measure the rate of flow of the cellulose solution, the viscosimeter is removed from the wheel, the wiring is removed from the rubber tubing and is replaced by pinch clips. The tube is then placed in a thermostat at 20 deg. C. After this temperature has been acquired, the clip and rubber tubing are removed from the lower end, and the tube is placed in a glass jacket within a larger vessel containing water at 20 deg. C. The shape of the jacket is such that the viscosimeter rests on three glass points at the bottom and is a sliding fit at the top (Fig. 2). The upper clip is then removed, and the solution allowed to flow freely through the lower capillary. The time in seconds for the liquid meniscus to fall from the upper to the lower ring is noted.

In order to calculate the weight of sample necessary to obtain a one per cent cellulose solution when the tube is completely filled with the solvent, the capacity of the tube is determined in the following manner. The tube is completely filled with water with the weight in position and is closed with the stopper as described above. The tube is then allowed to drain into a partially filled burette and the difference in reading noted. The average of several determinations is taken and from this result the amount of sample is calculated. An average of 4 per cent moisture content has been assumed. One gram of bone dry cellulose per 100 cc. of solution has been found to give satisfactory results over a wide range, from 10 to 1,000 centipoises.

Calibration of Viscosimeter Tubes

For a liquid which has a relatively slow rate of flow through a capillary tube, the following relation holds true—

$$dF = \frac{C}{t} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

where d is the density, F is the fluidity, t is the time of flow and C is the instrument constant.

When the rate of flow is relatively fast, a correction must be applied for kinetic energy and the above relation takes the following form—

$$dF = \frac{C}{t - \frac{k}{t}} = \frac{Ct}{t^2 - k} \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

k being another constant. It can be seen that when t is large, k/t becomes negligible compared to t.

In order to determine C and k for a given tube, the rates of flow of two different solutions of known viscosity can be determined, one having a high viscosity such as a glycerine solution while the other should have a low viscosity such as water.

The time of flow for water is obtained by filling the tube (with weight in position) with distilled water and measuring the time for the meniscus to drop between the etched rings, the temperature being kept at 20 deg. C. The density of water is taken as 1.000, and the fluidity at 20 degrees at 99.5 reciprocal poises.

A mixture of glycerine and water, the specific gravity of which is accurately known, can be used to obtain the remaining constants. The viscosity can be obtained from tables or curves using the specific gravity for reference. This procedure has been found to be sufficiently accurate. The time of flow is found in the usual manner as described above.

Preparation and Standardization of Solvent

The solution contains 15 grams of copper, 200 grams of ammonia and 1 gram of cane sugar per liter and is prepared in the following manner. The reaction vessel is a wide mouth glass bottle of about 4 liters capacity, surrounded with ice and closed with a stopper carrying a stirrer and an inlet tube, both of glass. A mixture containing 2 liters of concentrated ammonia solution (0.90) and 2 grams of cane sugar is stirred at about 400 r.p.m. with 120 grams of copper dust and air is blown in at the rate of 10 liters per hour through a wash bottle containing ammonia solution of density 0.90. The approximate copper concentration of the solution can be conveniently followed by colorimetric comparison with a standard of correct concentration, both diluted 50 fold. After standing for several hours the solution is syphoned through a gooch filter into a dark colored stoppered bottle. The solution is then analyzed for copper and ammonia and adjusted to the proper concentrations.

Copper

A 10 cc. portion of the solution is accurately measured into a 250 cc. erlenmeyer flask, and diluted to 50 cc. with distilled water.

The solution is boiled to expel excess ammonia and 10 cc. of 6 N nitric acid are added. The solution is then made alkaline with ammonia to the reappearance of the deep blue color. Add 10 cc. of 6 N acetic acid and excess potassium iodide and titrate with standard N/10 sodium thiosulphate using starch solution as an indicator.

Ammonia

Dilute a 50 cc. portion of the solution with water to 500 cc. in a volumetric flask. Withdraw a 50 cc. portion of this solution into a distillation flask provided with a trap, and dilute to about 200 cc. Add 25 cc. of dilute sodium hydroxide solution and a few pieces of feathered zinc, and distill into 300 cc. of standard n/10 sulphuric acid. After 150 ccc. have been distilled over, titrate the excess acid with standard n/10 sodium hydroxide solution.

A comparison was made between the falling sphere method and the capillary tube method. Three samples of rags were selected so as to cover the range usually encountered in paper mill work and viscosity determinations were made by the capillary tube method, using 1 percent cellulose solutions. The viscosity measurements were also made on these samples using the falling sphere

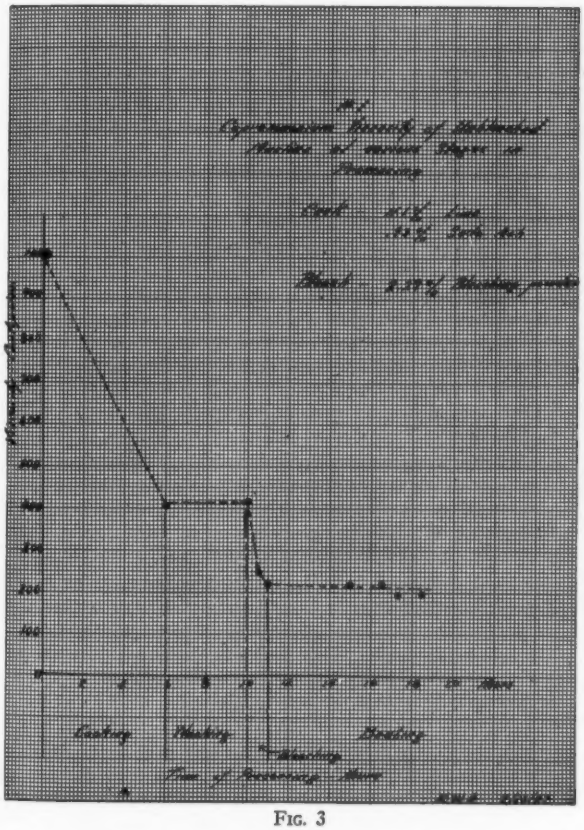

FIG. 3

method with 5 per cent cellulose solutions. The results obtained are concordant, the actual figures being as follows:

		Falling Ball (Seconds)	Capillary (Centipoise)
Sample	A	1289	1005
	B	50	54.7
	C	3/4	6.5

Rag Processing

The physical properties of paper are dependent on both the mechanical and the chemical treatment of the cellulose fiber. Great care is exercised in the milling of pulp, since the strength of the finished paper is influenced to a great extent by the manner in which the pulp is prepared. The strength of the finished paper is also influenced by the chemical treatment of the fibers, such as cooking and bleaching. Rag fibers have always been considered as the ideal material for the making of high grade papers, primarily because of strength and permanent qualities. Considerable work has been done in improving the process for making wood pulp, with the aim of producing a stronger, cleaner and a purer material. Comparatively little has been done concerning chemical treatment of rag fibers, with respect to papermaking.

Cellulose is always found in nature, associated with other organic materials, such as lignin, sugars, etc. In order to remove the

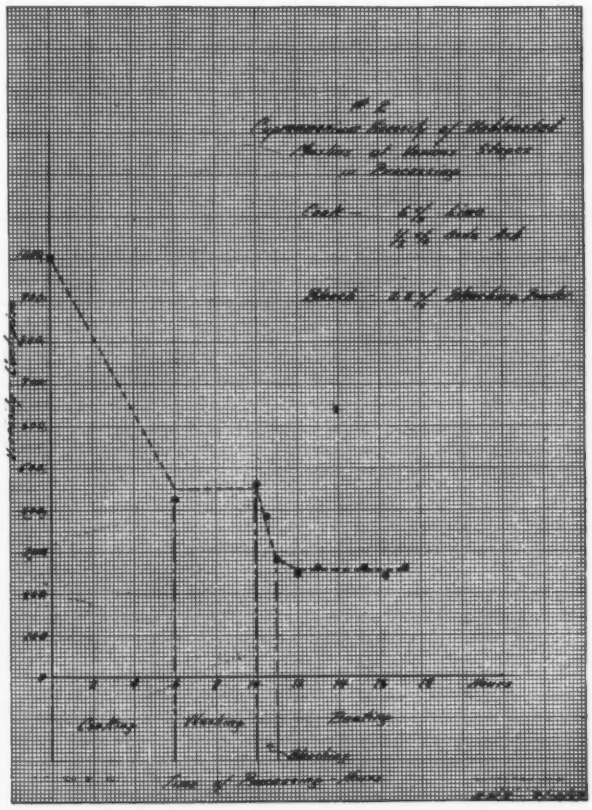

FIG. 4

non-cellulose impurities, the raw materials are usually cooked in some liquor, which dissolves the impurities, and in some cases, as in the treatment of wood, somewhat drastic chemical treatment is required to dissolve out the non-cellulose material. Cotton and linen must also be subjected to chemical treatment to remove impurities and improve the color. Apparently, the strength of the cellulose fiber is reduced by the usual chemical treatment, the loss in strength depending on the severity of the treatment.

There are many varieties and grades of rags used in the manufacture of paper, the grading of the rags being dependent on the color, cleanliness, ease of removing color and dirt, and the previous use of the rags, i.e. old or new rags. The strength of the fibers in the various rags varies considerably, being dependent on the previous history of the rags. Used and old rags have usually been subjected to many launderings or other treatment which tends to decrease the strength of the fibers. In the case of new rags the strength of the fibers also varies; in the textile industry the kiering and bleaching vary considerably depending on the color and strength desired. In the case of an unbleached muslin, strength is usually of major importance and in order to maintain the strength the bleaching has been reduced to a minimum. In the case of white broadcloth the chemical treatment is usually somewhat severe, in order to produce the color desired, and the strength must be materially decreased. Therefore, the strength of rag

fibers used in paper manufacture varies between rather wide limits.

Recent work on the strength of cotton subjected to chemical modification has shown some very interesting and unexpected results. "Changes in the chemical properties of cotton cellulose caused by the action of acids or oxidizing agents are always accompanied by a loss, large or small, in the tensile strength of the cotton, a phenomenon which is known as 'Chemical Tendering.'

"Chemical measurement of the extent of modification of cotton cellulose is valueless as a general guide to the loss of strength which has occurred. The most general chemical change which accompanies modification is an increase in the 'copper number' of the material, but a rise of one unit may be accompanied by practically complete loss of strength as in the action of alkaline hypochlorite solutions upon cotton, by 50 per cent loss of strength, as in the action of acids, or by an insignificantly small loss of strength as in the action of dichromate upon cotton. Chemical analysis is often unable to distinguish between the different possible sources of a high 'copper number,' and in addition, the 'copper number' ceases altogether to be characteristic of chemically attacked cotton, which has received any subsequent treatment with hot alkaline solutions."[7]

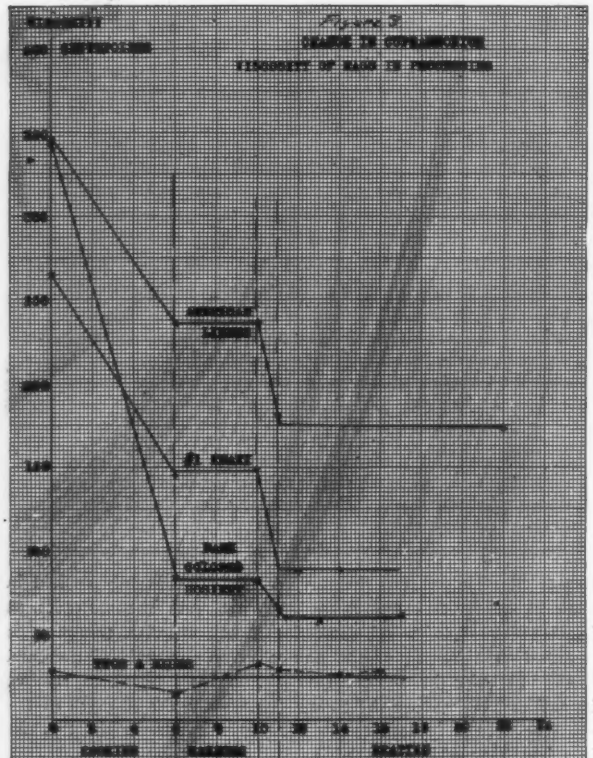

FIG. 5

One of the most prized features of cotton cellulose is its ability to withstand the action of hot dilute alkaline solutions without appreciable loss in strength and any lessening of its resistance to alkalies is very nearly as serious as a direct reduction in its strength. As early as 1873, Jeanmaire noted that cotton could remain in contact with dichromate for sometime without suffering any obvious change, but that subsequent treatment with hot alkali even with soap at 50 deg. C. caused great tendering.

In the classical observations by Witz, published in 1883, the author concluded that although cotton materials were tendered either by the action of acids or by that of oxidizing agents, it was only in the latter case that subsequent treatment with hot alkalies produced further loss in strength. Recent work by Clibbens and Ridge, indicates that cotton materials might evidently suffer chemical modification during bleaching, printing or dyeing, which would not result in a noticeable loss in strength until the goods were laundered. Therefore, it can be concluded that in the cooking of rags for making paper there is a considerable loss in strength since in most cases the rags have been subjected to previous chemical attack of a similar nature as described above.

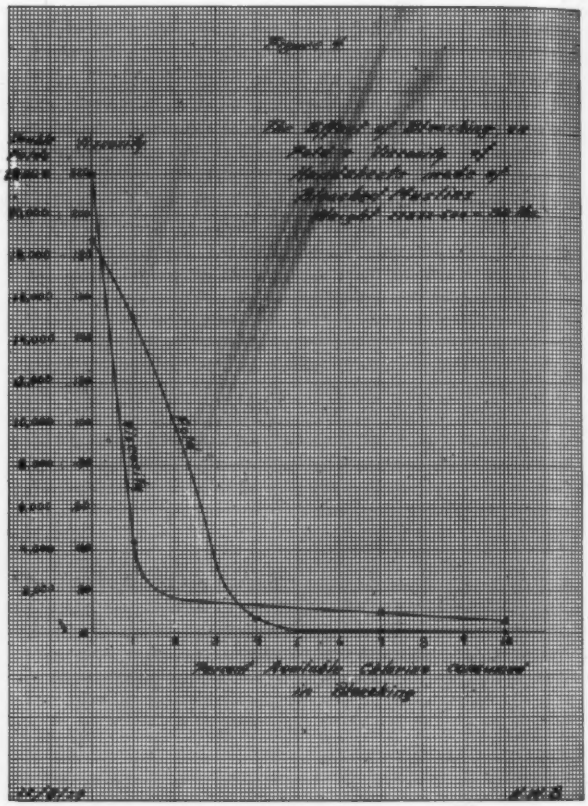

FIG. 6

In general the usual mill practice is to subject the rags to some sort of a cook before the washing and bleaching operations. The majority of rags require this treatment to saponify the greases and fats and to loosen the dirt, starchy matter and color. The cook also softens the rags and makes the beating less difficult so that even new white rags are subjected to a cooking operation.

It is usually assumed, since cellulose is quite stable toward alkalies, that rag cooking has no deleterious effect on the strength of the rags. But, as was noted above, alkaline cooking causes a loss in strength in cotton cellulose, which has been subjected to oxidizing attack in the textile industry. Moreover, the cooking of rags in the paper mill in many cases is a much more severe treatment than ordinary laundering so that a much greater loss in strength might be anticipated, regardless of the care exercised in textile bleaching to avoid loss in strength in subsequent laundering operations.

The bleaching of rags is also associated with a loss in strength of the fiber. In bleaching, it is doubtful if there is a selective oxidation of the coloring matter prior to the oxidation of the cellulose. The bleaching of rags in the paper mill may be associated with tendering of the fibers and loss in strength unless proper care is exercised.

An idea of the loss in strength in rags, due to processing, may be obtained from the following curves and figures:—

Cook Number 1

Five pounds of unbleached muslins cooked for 6 hours at 35 pounds gage pressure with 252 grams lime (11.1 per cent) and 21 grams soda ash (.93 per cent). The stock was washed for four hours, bleached one hour with 2.3 per cent bleaching powder, washed one hour and dumped into drainer. The material was then refurnished and beaten for 6 hours.

Sample	Viscosity
Untreated material	1,000 centipoises
Cooked, hand washed	406
End of washing	417
Bleached ½ hour	248
Bleached 1 hour	220
3 hours beating	220
4.5 hours beating	220
5.25 hours beating	192
6.25 hours beating	197

Viscosity Unaffected by Beating

The above figures are plotted in Fig. 3. The viscosity seems to be only affected by chemical treatment while ordinary beating and washing have no effect. The total loss in viscosity due to processing in the above case is about 80 per cent. It is quite difficult to actually prove that the loss in strength corresponds directly with a loss in viscosity but the fact remains that some change has occurred in the cellulose structure to produce this lowering of viscosity. It will be shown later that the lowering of viscosity due to bleaching corresponds to a decrease in strength (fold) so that it is logical to assume that a drop in viscosity due to cooking, or other means, also corresponds to a loss in strength.

Another cook was made on the same material using less lime and soda ash.

Cook Number 2

Five pounds of unbleached muslins cooked for 6 hours at 35 pound gage pressure with 136 grams lime (6 per cent) and 11.4 grams soda ash (½ per cent). The stock was washed for four hours, bleached one hour with 2.3 per cent bleaching powder washed for one hour and dumped into drainer. Refurnished and beaten for six hours.

Sample	Viscosity
Untreated sample	1,000 centipoises
Cooked start of washing	426
Washed material	461
Bleached ½ hour	385
Bleached 1 hour	280
1 hour beating	248
2 hours beating	261
3 hours beating	257
4¼ hours beating	264
5¼ hours beating	240
6¼ hours beating	262

The above figures are plotted in Fig. 4. The results obtained in cooks number 1 and number 2 agree fairly well; the drop in viscosity due to cooking in Cook number 1 is slightly greater than in Cook number 2 due to the larger amount of cooking chemicals.

Fig. 5 gives data on the drop in viscosity due to processing for a few rags. The rags were processed in the laboratory using the regular mill procedure. The results are quite similar to those described above.

The Effect of Bleaching on Fold and Viscosity

A study was made of the effect of bleaching on the viscosity and fold of papermaking fibers with the view of correlating the viscosity of the cellulose with the strength of the finished sheet of paper. In order to keep other influencing conditions, such as beating, constant, the work was done in the following manner:—

Effect of Bleach

Equal portions of stock from the beater were placed in glass stoppered bottles and bleach added so that a series of samples was prepared containing various known amounts of bleach ranging from 0 to 10 per cent available chlorine, based on the bone dry stock in the bottle. The bottles were stored at a temperature of 120 deg. F. for several days to insure complete consumption of the chlorine. Tests made on the water in the bottles showed that all the free chlorine was reduced. Handsheets were then made and tested for fold and viscosity.

A set of samples was prepared from some well beaten muslins. The results obtained are as follows:

Per cent available chlorine used in bleaching (Used on bone dry stock)	Fold	Viscosity
0	18827	220
1	15196	44
4	719	...
7	13	10
10	2	5.4

The above data are plotted in Fig. 6.

Another set was prepared from some new white shirt cuts.

Per cent available chlorine	Fold	Viscosity
0	288	40.7
1	209	16.3
2	176	6.93
4	19	4.90
6	5	4.39
8	1	...
10	0	4.02

These figures are plotted in Fig. 7.

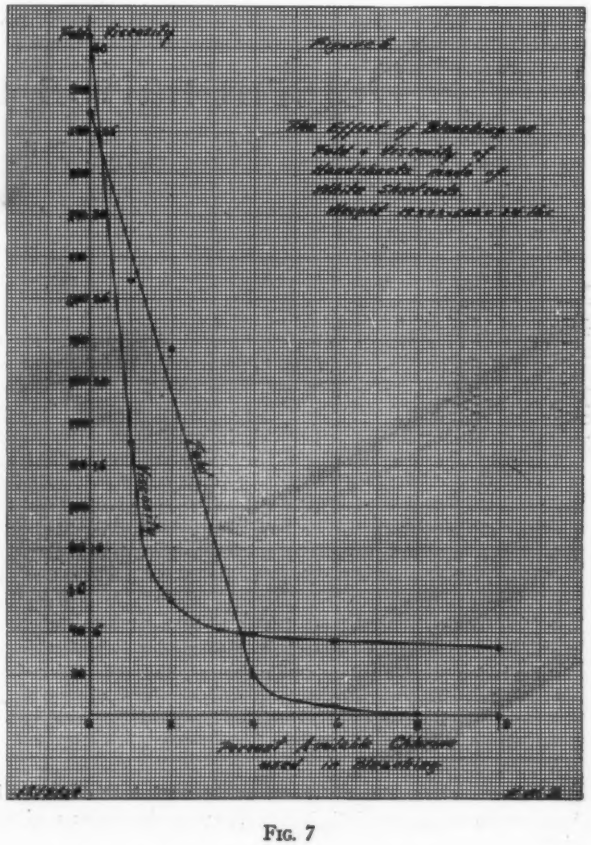

FIG. 7

The fold and viscosity curves are quite similar. The loss in strength due to bleaching is very great in the range of bleaching usually used in paper mill work, 0—2.5 per cent available chlorine or 0—6 per cent bleach.

From these figures it can be readily seen that loss in cuprammonium viscosity may be an excellent measure of loss in strength due to bleaching.

It has been suggested that the cuprammonium viscosity of cellulose might be a useful method for grading raw rags. With due allowance for color, cleanliness and other factors, it seems logical to assume that the higher the cuprammonium viscosity, the better the rag.

Viscosity determinations have been made on a few types of rags and the results are given in the following table.

Cuprammonium Viscosity of Various Materials

Material	Viscosity—Centipoises (a)	(b)	(av.)
1. Unbleached muslins	1050	955	1000
2. Unbleached muslins	607	583	595
3. Bleached muslins	130	148	139
4. Yellow muslins	694	683	688
5. Blue overall cuts	195	206	201
6. Collar cuts	193	190	192
7. Pink cuts	72.3	73.4	72.9
8. Linen cuts	53.1	56.3	54.7
9. Silesias	61	49	55
10. Hosiery	47.8	48.5	48.2
11. White shirt cuts	36.7	37.5	37.1
12. White shirt cuts	35.2	36.9	36.1
13. 3rds and blues	25	30	28
Pulps			
Alpha pulp	44.4	43.6	44.0
Bleached sulphite	15.6	16.7	16.1
Bleached flax pulp	8.26	8.17	8.22
Bleached soda pulp	6.52	6.23	6.37
Bleached linters	10.1	9.5	9.8
Bond Papers (Not corrected for non-cellulose material)			
100 per cent Rag	33.0	33.4	33.2
80 per cent Rag	22.9	22.7	22.8
70 per cent Rag	24.9	25.2	25.1
50 per cent Rag	10.7	10.4	10.6
100 per cent Bleached Sulphite	11.6	11.6	11.6

Summary

The capillary tube method of the Shirley Institute for determining the cuprammonium viscosity of cellulose materials is a simple and convenient method and can be readily applied to routine work. In the processing of rags, the cuprammonium viscosity is considerably decreased by the cooking and bleaching operations and to an inappreciable extent by washing and ordinary beating. The lowering of viscosity due to bleaching is a convenient method for detecting loss in strength (fold) and it is probable that a drop in cuprammonium viscosity is always accompanied by a loss in strength of the cellulose fiber. The classification of rag fibers with respect to strength by means of cuprammonium viscosity seems to agree with the classification set up by experience.

References

[2] Clibbens and Geake—J. Textile Inst., Vol. 19, T77, 1928.
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[6] Joyner—J. Chem. Soc. 121, 1511-25 (1922); 121, 2395-09 (1922).
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Determination of Surface Sizing*

By Philip W. Codwise[1]

Several methods of determining the total sizing, or so-called "total size resistance," of paper products are well known and generally accepted. However, the total sizing of a sheet of paper is made up of several elements, among which the resistances of the two surfaces are important factors. It is often necessary to know the exact degree of sizing of the surfaces as such may well be different in character from the internal sizing of the sheet. The possibilities of such variations in the resistance of the surfaces of paper products, to wetting with aqueous solutions, is clearly indicated by practical experience as well as from a consideration of various phenomena connected with the problem of sizing paper.

There does not appear to be any generally accepted method for determining the surface size resistance of paper. In view of this fact we are presenting a method which has found practical application for this purpose. In our official "Paper Testing Methods" reference is made to the fact that a method of determining the surface resistance factors for sizing is needed. It is a fact that the work here presented finds its greatest usefulness in grading the more moderate sized surfaces but it is believed that there are possibilities of altering the technique to render it applicable to distinguishing relative values within the range of the harder sized surfaces as well.

Fundamental Principles Involved

Published research work[2] has indicated that pure water is the last medium to use in investigating the action of aqueous solutions upon paper products. Therefore the work here described is based upon the action of distilled water upon the surfaces of the sheet.

When a drop of water at room temperature is placed upon a paper product it may pass through a definite series of changes that are well defined. On the other hand the surface may be so hard sized that no noticeable change will occur even after many hours exposure. The behavior of a drop of water from the time it is placed upon a moderately sized surface is as follows: First, it tends to form a spherical shape with its flattened area of contact with the sheet, of smaller size than the maximum cross section of the drop. This is due to surface tension between the sized paper and the water and appears to be more marked the harder the sizing of the surface. Secondly, the surface of contact between the water and the paper assumes a clear bright appearance which apparently remains such as long as the surface resists penetration of the liquid; as soon as the water commences to penetrate the surface in liquid form, the surface darkens. Thirdly, as the penetration of the liquid into the surface progresses it tends, in the case of ordinary fiber products, to creep out from the boundary of contact and to show a darkened feather edge around the drop. This is sufficiently far for us to follow the phenomena for the purposes of the present article although it may be here mentioned that the final step with unsized, or slack sized, papers is the disappearance of the drop by complete absorption.

In considering the above phenomena, it has been found that the point most suitable for adoption as the end-point of our test is the instant at which the liquid commences to creep out from between its boundary of contact and to form a slight feathered edge around the drop; another way of expressing this is to say that the end-point is taken when the edge of the drop commences to spread. To one accustomed to performing this test certain things may be ascertained about the surface as the test proceeds. In the first place a harder sized surface tends to offer more resistance to the flow of the water as applied and therefore, the drop tends to be taller and not so great in diameter. Again, the rate at which the discoloration of the surface under test proceeds is another important indication; when the drop is first placed upon a moderately or well sized surface the glistening appearance is seen and the gradual change in the color of the surface of contact to a duller and dark shade is a good clue to the degree of surface size resistance. However, due to the great variety of color of papers and to the difficulties of determining the exact time at which the color may change, this point scarcely appears suitable to serve as an end-point. For this reason, the time at which the water obtains a sufficiently strong hold upon the surface to commence working out from under the boundary of the drop, producing a slightly discolored feather edge around it is taken as the end-point. Papers on which the test drop neither spreads nor feathers after many hours exposure may be considered to have well sized surfaces. Clay coated paper surfaces appear to exhibit a slightly different phenomenon as instead of the drop feathering out, it gradually enlarges as the liquid takes hold upon the surface.

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[2] F. T. Carson, "Testing Paper for Permeability to Liquids," Technical Association Papers, TAPPI Series VIII, p. 91.

Very little is required in the way of apparatus to perform this test. A supply of distilled water and the usual one cubic centimeter pipette, which is about fourteen inches long, are needed. In addition to this an accurate thermometer and suitable equipment to determine humidity in the room should be at hand. A hand reading glass and excellent illumination are the other requirements.

All samples tested should be seasoned and tested under similar atmospheric conditions, preferably under the standard conditions of 70 deg. F. and 65 per cent relative humidity. The test should be carried out in a room at 70 deg. F. and with water at exactly 70 deg. F. The latter point is of first importance as a few degrees difference in temperature of the water may have a marked effect upon the result, as is true with many tests for degree of sizing.

To commence the test, place the sample with the surface to be examined uppermost upon a horizontal flat surface and in a well lighted position but away from direct radiation of heat; the specimens should not be moved or jarred during the test. Deliver one cubic centimeter of distilled water at 70 deg. F upon the surface to be tested from a one cubic centimeter pipette placed with its tip just above the surface in such a way that the tip remains immersed in the drop as the water discharges. This will form approximately a ¾-inch circular spot. Start a stop watch coincident with applying the water to the surface. The large drop is then carefully watched for indications of the feathering out, or spreading beyond the boundary, of the drop; the detection of this phenomenon may often be assisted by shading the drop slightly with the hand and by using a reading glass in order to more minutely inspect the circular edge of contact of the water with the surface. The observation of the end-point must be made with great care and the lighting should be such as to avoid strong shadows, as it is easy to miss the point at which the feathering commences especially when the shadow cast by the drop is heavy; this is especially true in the case of thin papers where the feathering may take the form of a very narrow discolored band around the edge of the drop.

In the case of the harder sized papers the test extends into a matter of hours and in such cases the specimen should be protected from evaporation by placing an inverted three inch watch glass over it with the test spot centered under the glass. The elapsed time until the feathering out or spreading of the liquid at the boundary of the drop occurs is reported as the test result. In general it may be stated that samples not showing any feathering, spreading or absorption at the end of twenty-four hours may be considered to have especially hard sized surfaces.

The value of this method is best illustrated by detailing the results of its application to products of the multi-cylinder board machine. Such paper products tend to be more complex in their sizing make up than does the average paper. A large percentage of such paper boards have an entirely different degree of size resistance on the two surfaces; in fact many of them are not sized upon one side although they may often show a slight degree of size resistance due to external causes. In certain cases it is necessary that the sheet be unsized upon one side in order to meet such use requirements as ready absorption, satisfactory adhesion and the like. At other times a definite degree of surface resistance, between fairly narrow limits, is the service requirement of a certain product. It is in such cases as these that this test has found its most evident application. Again it is a more or less well known fact that the water finishing of a sheet of paper tends to detract permanently from the surface size resistance. In such a case this test has been found most useful in determining the degree to which the surface has been changed during the finishing process.

The use of the test is well shown by describing its application in a few specific cases. In all instances detailed the results are given upon samples that have seasoned for a number of days under like conditions and which therefore, are strictly comparable; the water employed in testing is also always at exactly 70 deg. F. An excellent example is the case of a sample of water-finished paper-board calipering .028 inch manufactured upon a seven cylinder board machine. The sheet consists of three different types of stock; a face liner, a filler, and a back liner; the first two being sized and the last not sized. It is self evident that in such a case the surfaces must be tested for sizing if one is to get a clear idea of the make-up of the sheet. The sizing of the filler is sufficient to give high values for the total size resistance but this of course is far from giving an intelligent description of the sizing make-up of the sheet. Therefore, we apply this test to this sheet with the following results: (a) Face liner commences to feather in 16 minutes. (b) Back liner commences to feather in 3 seconds. Furthermore by going back one step in the manufacturing process and testing sheet made at the same time before going into the calender stack we find the following results: (a) Face liner commences to feather in 70 minutes. (b) Back liner commences to feather in 7 seconds. This instance alone shows the value of the test in investigation work and also demonstrates its usefulness in control work upon paper sizing. Other instances of its application to cylinder machine products may also be cited. For example, a folding box board slightly sized in the face liner only, to give the desired ink resistance, tests 25 seconds upon the face side and tests 2 seconds upon the unsized back side. Again an unsized chip board tests 2 seconds upon both sides. On the other hand, a hard sized solid manila board shows no spreading and very liftle discoloration upon either surface after a period of 24 hours.

There is also a certain difference in supposedly unsized surfaces when subjected to this test due to differences in raw materials, in the handling of them, and in the effect of the other layers in contact with the unsized one during various stages in the manufacturing process. For example, such surfaces may be found that will start to spread practically instantly while others may take 5 seconds, or 10 seconds and in rare instances 15 seconds, before the water takes hold sufficiently to commence to feather out.

That the test is applicable to the surfaces of thin papers as well as to that of paper board may be illustrated by the fact that upon newsprint the feathering takes place in 2 seconds upon both surfaces while upon hard sized wrapping paper there is no spreading and practically no discoloration in 24 hours upon either surface. In examining wrapping and writing papers by this method it is often found that the surfaces are hard sized to the limit of the test set at 24 hours. On the other hand, cases are found of softer sizing with both of these classes of papers.

In the case of wrapping paper we can cite the result just mentioned, of a sheet that shows no feathering and practically no discoloration upon either surface after 24 hours exposure, as possessing very well sized surfaces. Another example of a more moderately sized wrapping can be mentioned wherein each surface commenced to feather out after a 15 minute test period.

Again results showing varying degrees of sizing upon the surfaces may be described in connection with three different typewriter papers as follows:

Sample 1.—No spreading after 24 hours on either side.
" 2.—Feathers after 10 minutes exposure on both sides.
" 3.—Feathers in 2 seconds exposure on both sides.

It is evident that sample 3 is a slack sized product; that sample 2 has moderately sized surfaces; and that sample 1 has very well sized surfaces.

The point might again be mentioned here that the discoloration phenomena precedes the spreading and that, in the case of the many well sized papers that show no tendency to feather out upon prolonged exposure, the tendency for the surface beneath the drop to change in shade or depth of color often gives a further indication of the character of the sizing of the surface.

A method of quantitatively comparing the sizing characteristics of surfaces of paper products has been described.

This procedure has the advantages of simplicity and of direct numerical expression of the results. It is applicable to the testing of the surface size resistance of a large range of paper products.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

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Raw Materials

Wood Chemistry. V. Mechanical and chemical pulps from "Ezomatsu". *(Pices jezoensis)* Y. Uyeda and I. Mitsuhashe. J. Cellulose Inst. Tokyo 5:98-99 (1929). The results of analyses of the original wood and of the mechanical and sulphite pulps prepared therefrom are given.—C. J. W.

Suitability of Eucalyptus for Paper Pulp. Bennett Preble, California Institute of Technology. Paper Trade J. 88, no. 26, 53-60 (June 27, 1929). After reviewing the work which has been done to date on the pulping of eucalyptus, an account is given of an investigation into the pulping characteristics of the principal species of eucalyptus grown in California. E. globulus (blue gum), E. corynocalyx (sugar gum), and E. tereticornis (gray gum). The sulphate process was used at first; but as its use had to be discontinued, the so-called "hypo" process (using a solution of sodium hydroxide and of sodium thiosulphate) was used which though it probably could never be used commercially, gives a pulp very similar to sulphate pulp. Blue gum was very easily reduced, giving a high yield of light-colored pulp. Although the fibers are shorter than those of red cedar (taken as typical of the conifers) the felting power (ratio of length to diameter of fibers) is high. The strength developed by a remarkably short beating period is higher than that of the best sulphite pulp. Slightly less favorable results were obtained with gray gum, the pulp being much darker than that of blue gum and somewhat darker than that of red cedar, and not quite as strong as that from blue gum. Sugar gum did not give promising results, the wood being hard to reduce and the color of the pulp poor. Further efforts on pulping of this species by alkaline processes are not considered worthwhile, and it is suggested that the possibility of pulping it by the sulphite process be investigated. A chronological bibliography of work on the use of eucalyptus for papermaking is given.—A. P.-C.

Wood Pulps of Today. N. L. Nourse, Brown Company. Paper Ind. 11, 471,473 (June, 1929). A brief outline of the development of high purity wood pulps (containing 92% and over of alpha cellulose) and discussion of the reasons why they so readily find application in high grade, coarse and fine papers. —A. P.-C.

Paper Deinking Solution. W. Lewis. Belg. pat. 355,870, Dec. 31, 1928. The pulp is treated with an aqueous solution of water glass, and the latter is pressed out of the pulp after deinking is complete.—A.P.-C.

Method and Means for Deinking Waste Paper. J. DeWitt. U. S. pat. 1,705,907 and 1,705,908, Mar. 19,1929. *No. 1,705,907*—The waste paper is soaked for about two hours with a cold soak solution in a so-called "mangle tank" consisting of a long, U-shaped tank provided with a number of parallel longitudinal shafts with series of arms spaced approximately six inches apart, about 15 inches long, and with diamond-pointed ends so as to tear the paper apart. The mangle arms are then rotated for about 15 min. the material is allowed to soak without agitation for another two hours, the mangle arms are again rotated for 45 min., during the last 15 of which fresh water is introduced into the tank. The pulped stock is then pumped in successive measured amounts to a specially designed pump in which the excess liquid is pressed out in contact with a mass of compressible material, preferably of sponge rubber or fiber material, which is held between spaced screens or grids in the head of the piston of the pump and is also washed with fresh water in the pump cylinder. *No. 1,705,908* covers more particularly the pump used for removing the deinking solution and washing the deinking pulp.—A P.-C.

Pulping Flax Straw. VI. Properties of Flax Straw Cellulose and Its Value in the Cellulose Industries. Earl R. Schafer and Mark W. Bray. Forest Products Laboratories, Madison, Wis. Paper Trade J. 89, no. 5, 51-53 (Aug. 1929). A description of the composition of seed flax straw and of the pulps obtained therefrom by means of lime, caustic soda, and by the chlorine and sulphate processes.—A. P.-C.

Paper Manufacturing System. L. S. Rosener and D. H. Patterson, Jr. assignors to the Paraffin Companies, Inc. U. S. pat. 1,704,216, Mar. 5, 1929. Heavy, bulky materials such as old telephone directories and magazines, paper rolls, etc., are shredded and then sent directly to the beaters, provision being made to weigh the amount sent to each beater. Provision is made for centralizing the control of the shredders, conveyors and beaters at one point, so that one attendant can operate them by means of remote control devices, and an elaborate system of signals is also provided so that the attendant knows at all times the requirements for supplying the beaters with raw material and also the movements of the mechanisms, conveyors, etc., which he controls.—A. P.-C.

Cellulose

Estimation of Cellulose in Wood. J. H. Rose, A. L. Davison and E. O. Houghton, Forest Products Laboratories of Canada, Montreal. Pulp Paper Mag. Can. 27, 925-926 (June 20, 1929). The method is based, like the Cross and Bevan method, on chlorination of the non-cellulose and solution of the chlorination priducts in an alkaline solution, hypochlorous acid is used instead of chlorine gas, and ammonia water instead of sodium sulphite solution. The following procedure is proposed: boil 1 to 2 g. of wood meal (60 to 100 mesh) for a few minutes with 200 cc. of distilled water in a 600 cc. beaker, siphon off the water and wash the residue with cold water (a siphoning and washing apparatus is described), add 100 cc. of 5 per cent sulphuric acid, a small piece of ice and 100 cc. of sodium hypochlorite solution (containing 1 per cent of available chlorine), let stand 5 minutes with occasional stirring, siphon off the chlorinating solution, destroy the residual free chlorine by adding 100 cc. of 5 per cent sulphuric acid and 25 cc. of 10 per cent sodium sulphite solution. let stand 5 min. siphon off the antichlor, wash with water, add 200 to 300 cc. of ammonia water (100 cc. of concentrated ammonia water diluted to 1.1), boil 15 min. remove the ammonia extract, wash with hot and then with cold water, repeat the series of operations (using 3-min. chlorination periods) until the ammonia extract is practically colorless and the wood only faintly grayish in the ammoniacal solution, dry and weigh the residue. If the wood contains degraded cellulose, ammonia extraction is best carried out under a reflux condenser. The cellulose thus obtained is not a pure cellulose but is equivalent to the type and amount obtained from wood chlorination with chlorine gas. To estimate the resistant cellulose reflux the residue with 1 per cent caustic soda solution for 1 hr. wash with water,

acetic acid and water, dry and weigh. The method may be modified to include either extraction with 1 per cent caustic soda for 2 hrs. at water bath temperature, or extraction for 6 hrs. with 1 per cent caustic soda at the boiling point prior to chlorination. When applied to purified cotton cellulose the method produced no loss of cellulose and only an insignificant reduction in resistant cellulose.—A. P.-C.

Rayon and the Essential Qualities of Sulphite Pulp for the Manufacture of Viscose. Synthetic Silk D. C. M. Papeterie 51, 486, 489, (May 10, 1929). A brief outline of the properties required in sulphite pulp used in the manufacture of viscose.—A. P.-C.

Composition of Jute Fiber with Special Reference to the Use of Chlorine Dioxide as an Analytical Reagent. J. K. Chowdhury and P. C. Majumdar. J. Indian Chem. Soc. 6, 239-251 (1929). Successive treatment of jute fiber with a 2.5 per cent chlorine dioxide solution removes almost the whole of the lignone (15 per cent) but does not affect the raw cellulose (about 85 per cent). The value for the lignone content agrees with that obtained using Willstätter and Zechmeister's method, while the cellulose content is about 10 per cent higher than is indicated by Cross and Bevan's method. The delignified fiber is of a good tensile strength but is disrupted by boiling with sodium sulphite or alkalies. With Schweiter's reagent swelling first occurs with ultimate dissolution. Removal of the hemicelluloses from the raw cellulose by washing with 17.5 per cent of alpha-cellulose (60.6 per cent of dry jute), which contains only small amounts of ash and furfuraldehyde. Determination of the pentosans in raw jute and raw cellulose give values which are almost identical (about 10 per cent), showing that they are unaffected by the chlorine diozide treatment. Washing the raw cellulose with 5 per cent sodium hydroxide solution removes the gummy material (13.56 per cent), which is isolated by diluting the washings with much alcohol and subsequently acidifying with a slight excess of hydrochloric acid. Partially delignified jute (lignone content about 5 per cent) is less susceptible to washing with alkali than the completely delignified fiber.—C. J. W.

Review of Cellulose Chemistry Developments. John L. Parsons, Hammermill Paper Company Paper Trade J. 88, no. 21, 73-74 (May 23, 1929). A brief review of the activities of the committee on methods of analysis of the Cellulose Division of the American Chem. Soc. together with a description of the method proposed by it for the determination of alpha-cellulose. —A. P.-C.

Adsorptive Power of Cellulose. Stephen R. H. Edge. Wiggins, Teape & Co. (1919). Ltd. J. Soc. Chem. Ind. 48, 118T-121T (May 31, 1929). Results are given and discussed of a number of tests on the adsorption of water, acids, alkalies and salts by cellulose (cotton, sulphate and sulphite pulps). They confirm and amplify some of the results published recently by H. Roschier (Papir Journalen 16, 108 (1928) in a paper on the importance of aluminum sulphate in papermaking. Though the results do not disprove the amphoteric nature of cellulose, they are adequately explicable on the assumption of colloial adsorption of salts and acids in the skin layer of the fibers. They also make clear the great importance of considering what is happening to the ash-forming constituents in all work bearing on the absorption power of cellulose.—A. P.-C.

Lignin

Lignin II. R. O. Herzog and A. Hillmer (with E. Paersch and E. Hellriegel). Ber. 62, 1600-1602 (1929)—It is assumed that atmospheric oxygen plays an essential part in the union of the lignin components in nature. The action of air or oxygen on isoeugenol, followed by dissolution of the product in ether and precipitation with light petroleum ether, yields, a product differing from vanillin, dehydrovanillin, diisoeugenol and dehydrodiisoeugenol. Analyses of the product and its non-crystaline acetate indicate the union of two molecules of isoeugenol with addition of oxygen. The material is not hydrogenated in the presence of platinum black. Its ultra-violet absorption curve has the form typical of isoeugenol, coniferyl alcohol and lignin. It gives a reddish violet color with phlorogulucinol and hydrochloric acid. Cautious treatment of rye straw at the ordinary temperature with 2 per cent methyl alcoholic sodium hydroxide in the absence of air and light yields, after electrodialysis, a lignin soluble in alkali and (colloidally) in water. The molecular weight in phlorogulucinol indicates the presence of about coniferyl residues. Its absorption spectrum in the ultra-violet is exactly similar to those of other types of lignin. It is not reduced by hydrogen in the presence of platinum black.—C. J. W.

Lignin and Cellulose X. Aromatic nature of lignin. H. Freudenberg, W. Belz and C. Niemann. Ber. 62, 1554-1561 (1920).—C. J. W.

Survey of the Chemistry of Lignin. Emil Heuser, Canad. Int. Paper Company. Paper Trade J. 88, no. 21, 75-78 (May 23, 1929). A review of recent results obtained on the determination of the constitution of lignin, with bibliography of 55 references (since 1921).—A. P. C.

Lignin. P. Marcel Soum. Papeterie 51, 478-482 (May 10, 1929). After a brief review of the different types of lignin, analyses are given of these lignins prepared from the wood of Maritime pine. They were obtained in 5.35 per cent to 32.30 per cent yields and contained 63 per cent to 68 per cent carbon, 5 per cent to 7 per cent hydrogen, 10.27 per cent to 18.01 per cent methoxyl, 0.41 per cent to 3.73 per cent ash, and 0.38 per cent to 3.20 per cent pentosans.—A. P.-C.

Mechanical Process

Wood Grinding Machine. R. E. Read assignor to Intl. Paper Co. U. S. Pat. 1,705,097, Mar. 21, 1929. The object of the invention is to provide a type of continuous feed of the wood in which the full area of the mass of wood is subjected without interruption to the grinding action and in which the wood may be advanced slowly to the grinder without liability of the failure of the feeding pressure. It consists in combining with the wood-feeding means forcing the wood against the pocket with cylinder and piston mechanisms which are operated by the wood-feeding means to apply their driving forces consecutively to the wood-feeding means so that there will be no interruption in the grinding operation. In the embodiment described sets of endless feeding chains are mounted at opposite sides of the pocket and are provided with lugs to act on the opposite sides of the mass of wood between the chains, the wood being introduced into the open upper end of the pocket continuously and advanced continuously by the feeding chains. The chains pass around idler sprockets at the upper end of the pocket and around driving sprockets at the bottom of the pocket, and cylinders and pistons operated by fluid pressure are used to rotate the driving sprockets. Suitable controlling means for the cylinders and pistons are provided to cause them to operate in sequence consecutively; and the pistons are so connected with the driving sprocket wheels that the latter will be rotated continuously by the two cylinders and pistons operating consecutively to each other.—A. P.-C.

Chain for Pulpwood Grinders. J. E. Burkhardt assignor to J. J. Warren. U. S. pat. 1,712,376, May 7, 1929. The chains described in J. J. Warren's U. S. pat. 1,465,069, of Aug. 14, 1923, operate well in practice but are rather expensive to manufacture. In the present invention both link and spur are forged from a single piece of metal, which construction is both cheaper and more rugged. The spurs engaging the wood are also made with a wider face, so that when working with soft or rotten logs they will not be crushed.—A. P.-C.

Pulp Making in Scandinavia. Ivar Lundbeck, Thilmany Pulp and Paper Company (now with Mo & Domsjo a/B) Paper Mill 52, No. 21, 22, 26 (May 25, 1929). A brief description of some interesting Scandinavian inventions and methods which are but little known in America.—A. P.-C.

Scientific Control in a Groundwood Mill. William H. Brydges, Bedford Pulp and Paper Company. Paper Tr. J. 88, No. 25, 70 (June 20, 1929). Paper Mill 52, No. 23, 36, 53-54 (June 8, 1929) Paper Industry 11, 654-655 (July 1929); Pulp Paper Mg. Can. 28, 257, 258 (Aug. 15, 1929). A brief discussion of the advantages of scientific control in maintaining uniform quality of pulp to meet the requirements for which it is intended together with a brief description of the merits of the Meyer grinder governor.—A. P.-C.

Alkaline Processes

Shive Count as a Factor in Mill Control. A. B. Larcher, Penobscot Chem. Fiber Company. Paper Mill 52, No. 23, 42 (June 8, 1929). Paper Tr. J. 88, No. 24, 93 (June 13, 1929). A brief discussion of the application of shive count for controlling the quality and uniformity of soda pulp.—A. P.-C.

Variation of the Density of Sulphate Black Liquor with Changes of Temperature. Harry D. Crandon, University of Maine (now with DuPont Viscaloid Company) Paper Tr. J. 89, No. 6, 59-61 (Aug. 8, 1929). The variation in density of sulphate black liquor as compared with water at 20 deg. C. was determined over a temperature range of 25 deg. to 95 deg. C. and it was found that no matter what the initial density of the black liquor may be (within the range of mill) practically the change of density over the same temperature is uniformly the same. —A. P.-C.

Process for the Extraction of Cellulose from Plants and Industrial wastes. Papeterie Navarre. Belg. pat. 354,904, (Nov. 30, 1928). The material is treated with successive solutions of caustic, the initial solution being black with high organic matter content and low caustic soda content, the organic content decreasing the caustic soda content increasing in successive liquores, until the final treatment is carried out in a caustic soda solution free from organic matter. Straws, esparto, etc., are treated at atmospheric pressure, and wood is treated in an autoclave.—A. P.-C.

Reaction Products of Alkaline Cooking Process. H. E. Wahlberg. Pulp Paper Mag. Can. 27, 797-800, 828 (May 30, 1929). A resume of the equations involving cellulose, lignin and hemicellulose in the alkali pulping process. Several graphs and illustrations of molecular structure accompany the article.—A. P.-C.

Sulphate Process and Kraft Paper. George Voght, Mosinee Paper Mill Company, Paper Ind. 11, 467, 469 (June 1929); Paper Mill 52, No. 23, 26, 28, 58, 81 (June 8, 1929); Paper Tr. J. 88, No. 24, 77-78 (June 13, 1929). After a brief outline of the early development of the process, the latter is described.—A. P.-C.

Straw and the Monosulphate Process. A. Muller and Co. Papeterie 51, 238-242 (Mar. 10, 1929). A reply to Fournier's criticisms of the Braun process.—A. P.-C.

Process and Apparatus for the Treatment of Crude Fibers and Flax Straw Preparatory to Converting Them into Paper Pulp. Julien Jaraczewski and Eugene Paquet. Fr. pat. 653,022. Flax straw can be easily converted into paper pulp by cooking for a given length of time under definite pressure with alkaline liquor which is constantly stirred. It is best prepared by subjecting it to an energetic washing and simutaneously subjecting it to a crushing and violent rubbing treatment which isolates the fibrous material from the pectic and incrusting matter. The apparatus for carrying out this treatment consists of a casing within which is a vertical rotor. The top part of the rotor is conical to distribute the chopped straw, the middle portion is cylindrical in shape and is provided with a helfix to feed the material downwards towards the bottom portion which is in the form of a truncated cone, the surface of which is vertically grooved and lies close to the inner wall of the casing, the latter being roughened or provided with hard blades, e.g., of auminum bronze.—A. P.-C.

Sulphate Process

Alteration of Sugar-like Substances in Sulphite Cellulose Cooking. II. E. Hagglund and T. Johnson. Svensk Kem. Tidskr. 41, 55-59 (1929). The sugars (mainly mannose, xylose, and dextrose with small amounts of glacatose and levulose) formed during the manufacture of cellulose are readily oxidized to carboxylic acids by boiling with calcium sulphite liquor. In an extract prepared by boiling 332 grams of air dried wood with 1500 cc. of sulphite liquor containing 4.6 per cent of sulphurous acid and 1.32 per cent of lime for 20 hrs. at 135 deg. (max. temp.), the presence of mannonic and xylonic acids has been definitely proved, the former being identified by its brucine compound and phenylhydrazone, the latter by its double salt with cadium bromide. Tests for cluonic acid, on the other hand, were negative.—C. J. W.

Drying

Condensation Exhaust for Drying Cylinders. P. O. T. Sylwan. U. S. pat. 1,664,907, Apr. 3, 1928. In order to prevent the occurrence of so-called air cushions, which hinder the draining of the condensate from the drier rolls, the condensate is emptied into a suitable drain pipe which communicates with the interior of the drying cylinder through a liquor seal.—A. P.-C.

Temperature Control for Electrically Heated Paper Driers. S. A. Staege assignor to Westinghouse Electric and Manufacturing Company. U. S. pat. 1,669,582, May 15, 1928. The electrical heating elements are divided into a suitable number of groups, the energization and de-energization of which are controlled by means of motor driven contact drum that is rotated at slow speed and has contact members associated with it. The drum is provided with an electric-conducting contact plate extending entirely around the drum at one end and having a diagonal edge at the other end. The drum can be displaced longitudinally under control of a thermostatic element in the drier casing, which causes a greater or lesser number of the contact brushes of the heating circuits to intermittently engage the non-conducting surface for different lengths of time.—A. P.-C.

Paper Drier. H. D. Bean. U. S. pat. 1,656,853, Jan. 17, 1928. The drier is divided into a number of units, each comprising a frame with a number of drier rolls placed vertically over another. Guide rolls are provided so as to hold the paper in maximum circumferential contact with the faces of the drier rolls. Some of the guide rolls are arranged in proximity to the drier rolls and are provided with suction boxes to withdraw the moisture released from the paper and the felt through contact with the drier rolls. Means are also provided, in the form of pipes through which heated air may be blown against the sheet between the drier rolls, for inducing air circulation and preventing the formation of air pockets.—A. P.-C.

Drier Roll Siphon Construction. E. E. Berry assignor to Beloit Iron Works. U. S. pat. 1,664,656, Apr. 3, 1928. The condensate is removed through a pipe passing through the hollow trunnion. At the inner end of this pipe is screwed a header or manifold to which are attached a number of radial siphon pipes, the outer ends of which are threaded to receive an adjustable nipple. The inner wall of the drier is grooved opposite the ends of the siphon pipes to collect the condensate, and the nipples are adjusted to give just the required clearance between the ends of the siphons and the bottom of the groove so as to obtain maximum efficiency in the removal of the condensate.—A. P.-C.

Drier for Paper Board or Pulp Board. H. C. Harvey assignor to the Agasote Millboard Company. U. S. pat. 1,668,314, May 1, 1928. The board is carried horizontally between carrying rolls through a casing where it is dried by the combined action of steam heating coils and blasts of heated air. The latter are disposed in such a manner that, after the intercellular moisture (moisture absorbed in the fiber proper) is removed first from the central line of the sheet, and then progressively towards the edges. By operating in this manner, strains and stresses within the dry sheet, which render the sheet liable to distortion when exposed to unfavorable atmospheric influences, can be avoided almost entirely.—A. P.-C.

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Personnel Problems in Management *

By Earl B. Morgan[1]

PRESIDENT HERSEY—The first talk to be given this morning is on the subject of "Personnel Problems in Management." A subject of this nature is always of great interest to the accountant. It deals with the human element in business and management. I am sure we are very fortunate in having on this program a speaker who is very familiar with this subject, and who has done a great deal of work along these lines. Mr. Earl B. Morgan was formerly with the Curtis Publishing Company, but is now working independently as a Consulting Management Engineer, of Philadelphia. I am sure he has a great deal, of interest, to tell us, and his talk will also be very instructive to all of us. I take pleasure now in introducing to you, Mr. Earl B. Morgan.

Tended to Cloud Atmosphere

EARL B. MORGAN—It is a pleasure to be with you here this morning. I rather had some fear in approaching a subject about which so much has been written and so much said in recent years. However, I have a feeling that this very large amount of talking and writing has tended to cloud the atmosphere rather than simplify matters. What I shall attempt to do if possible is to bring us down to earth, so to speak, and try to touch on just a few fundamentals which I think underlie the approach to a possibility in solving this problem.

Out of experience, I have come to believe that the very first personnel problem any management faces in any business is to create and maintain throughout the entire organization, from the top to the bottom, an appreciation of earning a sufficient return on the money invested in the payroll. That is about as simple a statement as I know of, to sum up personnel management. I want to repeat it—to earn a sufficient return on the payroll investment.

If you stop and consider for a moment that a sixty dollar a week man wage is just about the same as the income on fifty thousand dollars, at six per cent, you will see what I mean. I draw that parallel in order to focus your attention on the responsibility involved in hiring such a man. Supposing any one of you had to invest fifty thousand dollars for your firm. In the first place it would be reasonable to suppose that you would be sensible of your responsibility. You would analyze your requirements, you would thoroughly study the purpose of the investment, what you hoped to accomplish; you would study the factors affecting the value, security, earning power. You would shop around and then you would sift out and finally select the investment you were going to make. You would take plenty of time and care. Gentlemen, today we find in all businesses, executives who will rush out and assume the responsibility of investing sixty dollars a week in payroll, on simply what might be termed "hunch," without any appreciation of their responsibility involved to make a return on that investment, without taking the due care and thought that it merits on a dollars and cents basis, not to mention the humanitarian angle.

More Care in Selecting Employees

Now, surely this justifies a plea which I am going to make for more care and thoroughness in selecting employees. If an executive will only think of each man he employs in terms of the capital which that wage will command, I think he will pay the proper respect to his task. The proper handling of personnel problems in management is a straight dollars and cents proposition. We must remember, just as your Chairman has pointed out, that business is in business to make money; to make a return on the investment material and machinery. Competition, as we know, gets keener day by day. I am always reminded of Roy Octavus Cohen's story in the Saturday Evening Post, where he said, "One must run like the devil to stay where he is at, nowadays." Raw material and plant shipment can readily be matched by the average competitor. Aside from the limitation of patents, products and methods may be similarly duplicated. Everything that goes into the business, with the exception of personnel, can be duplicated by a competitor with money, on short order. The personnel is the one big opportunity, gentlemen, to gain an edge on a competitor.

Now I have been through several strikes, and I hope I won't have to go through another. But there is one lasting impression which these strikes left with me, that is, machinery, building, materials, are all worthless monuments, without men to run them.

Now, it seems to be a sort of common impression, as I get around, that personnel problems are limited to the matter of hiring and firing. This is all wrong. It is true that these functions do form part of the responsibilities of managing the personnel. But it is really a far broader field.

Work Must Be Analyzed

First, I believe that the work to be done must be analyzed in order to determine the requirements. Second, after this analysis has been made, the work should be organized, that is, define the lines of responsibility and authority, what might be commonly called an organization chart. In other words, what I am trying to put over is that you have got to plan the functions and where they belong, and who is going to do them, and who is going to be responsible for having them done.

We frequently find an example of where an executive requests another employee, and the reason he gives is, "We have more work than we can do." Yet, in these very cases, without ex-

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ception, I have seen it come to pass that when someone got in there and studied the situation and took up the loose ends of the organization and tightened up the reins, that a new employee was not necessary. Too many organizations, I think, are allowed to just grow up like Topsy. When I was in corporation work, I always eased my conscience with the thought that I earned my wage alone by simple preventing putting so many employees on the payroll every year.

Don't let me give you the impression that you should have somebody sitting, with four wheel brakes, to prevent putting employees on the payroll. There are times when that would certainly be the height of inefficiency. There are times when employees are needed and needed quickly and badly. But it is surprising, gentlemen, in how many cases an executive will grab at a straw, so to speak, under stress, and simply ask for another employee to solve his difficulty. I want to impress you with this fact, because I think there are fields of great saving in all organizations along that line.

So it is necessary to approach the problem of selecting the new employee only after you are sure he is needed, and then that you know what is needed; in other words, that you know what the requirements are.

Selecting New Employees

Now we come to selecting the new employee. I have had just enough experience—and to give you a picture of that experience, my associates in past years have probably interviewed over one million people, and been responsible for hiring over two hundred thousand. But out of all this experience I feel I know little or nothing about the problem. And, the more I have to do with it the less I feel I know about it.

There seems to be a constant search among all business men, nowadays, for some formula for selecting people, some hokus-pokus by which you can pick out the right men every time, and make a one hundred per cent fit out of the proposition. I want to assure you that there is no such thing existing and there never will be in my opinion. And, anyone who claims he has any such method is a charlatan. There are too many variables that are entirely beyond the scope of measurement, beyond any possibility of determining accurately by any mathematical formula.

But what are we to do about it? I can only help you by presenting certain suggestions which are born of experience.

The first of these is a psychological suggestion, that is, that executives should approach the problem in the proper frame of mind, that is, with a recognition of the importance of the employee's selection, and give the time and thought to the matter that it deserves. In other words, appreciate that it is a matter of payroll investment, not payroll expense.

Second, analyze the job, determine the requirements. We all know that each job is composed of certain operations, motions, and has certain surroundings and associations. Determine these, and from them design specifications of the person to fill the job; not only for the present, however, but for the future as well, because every opening for an employee is an opportunity to groom someone for a job later on. I know I have had the sad experience of putting people with limitations, in certain elementary jobs, only to find later on, when an opportunity opened up higher in the organization, that the man was not capable of realizing his opportunity, and then had to resort to what is not satisfactory, to the morale of the organization, go outside and get a man and bring him in over that man, thereby killing incentive.

Give Selecting Ability a Fair Chance

Third, it is necessary to recruit a sufficient supply of candidates to give your selecting ability a fair chance. No matter how good your methods of selection may be, no matter how experienced and how good judgment your executive may have, naturally he can select no better than the supply affords. The best he can do is to select the best of his supply, which makes it nesessary that the firm give some attention to the supply of its human material, just the same as it gives attention to the supply of its raw materials, its mechanical equipment and so forth.

It has been my experience that the firms who do give attention to this matter, who do budget their personnel requirements ahead and plan them, hand in hand with their requirements for raw material, are those who seem to weather the storm when labor supply becomes a little tight. In other words, this phase, (and all phases, in fact, of the personnel problem), is not to be handled as a crisis when it comes up, but it is only solved by having predetermined plans and policies and being prepared for the situation.

Fourth, obtain a statement of age, education, home conditions, employment record and other facts about the person. It seems simple, perhaps, that I should have to state this, but it is amazing how few executives know how to get a straight forward declaration of facts about a person. I wish sometimes that there was a Robert W. Hunt and Company for analyzing the qualities of human material, the same as there is for obtaining such information on materials. It would certainly be of help.

Fifth, check up on these facts and you will find some surprising developments if you do this thoroughly. And also, incidentally, what you find out will allow you to evaluate some of the things which the prospective employee has declared.

References, which I am merely referring to, are not always of apparent value. But nevertheless I feel that you should exhaust all sources of information. In nine cases out of ten you will probably learn nothing of any value. But when you least expect it, you will stumble onto some information. I always look at it this way: that the past employers of a man have valuable information, if I can only get hold of it. And there must be ways of getting hold of it if I approach it in the right method. In general I am advocating the necessity of marshalling all facts from every possible source that will be of assistance. The more you know about this man, your candidate, the better the possibilities of your sizing him up properly and doing justice to him and your company.

Hidden Pride in Many Executives

Most peculiarly, and it is a thing I can never explain, there seems to be a hidden pride in many executives, in their ability to size up men. They will probably confess to many weaknesses, but they will hold on tenaciously to that one, that they feel they are the champion pickers of men. No matter what else they cannot do, they can pick and handle men. When you pin them down and ask how they do this star picking, they are forced to admit if honest, that it is my "hunch," they simply size a man up by the "cut of his jib."

Sixth, this leads up to another very important thing, to have a thorough interview. Only last week I was in a client's office, it happened to be the president of a company, and I saw him hire a sales manager in less than two minutes, to take charge of a very important territory, and he paid him $7,500 and wished him luck, and told him to report to so-and-so. He had never met the man before, and I am sure he knew little about him. But no matter how much he knew about the man, on paper, or by what others had told him, he did not know that man. After the man went out, I said, "You work fast."

"Oh," he said, "I can tell the minute a fellow walks in that door whether he is the man I want or not."

I said, "You are a wonder. You ought not to be the president of this organization. You could make real money outside selling your services as a 'man guesser.'"

There is too much of this "race-track" interviewing of men, looking 'em over in the paddock and then placing a bet. A book could be written on this subject of interviewing. I shall not attempt to exhaust the subject. I will touch only on a few high spots. In the first place, make the interview thorough. If you cannot do it in one interview, do it twice or three times, until you are sure you have your own close-up of a man. The object

of the interview naturally is to get acquainted. You wouldn't have to interview a man with whom you had been acquainted several years. You already are able to size him up. But you have not met your candidate before, so you have got to get acquainted with him. You have to find out what kind of a bird he is, how he thinks, his viewpoint on government, business, life in general.

You might ask, why on government—why on business. I am one of those who believe that a man who is radical about government, politics and religion will be radical in other lines. A man who is one of these uplifter types will be so inclined to approach things that come up in your business. If he has a negative type of mind—in other words, if he is like the fellow who, if you write two down, and two below it, and ask him what is the answer, and he answers zero, that is pretty conclusive of the fact that he is diametrically opposed to the fellow who answers four.

How Is a Man Going To React

You want to find out how a man is going to react, what impression he is going to make on your customer, with whom he will come in contact, how he is going to represent your house. You want to see how he is going to fit with your organization and how your organization is going to fit with him. To get these reactions it is certainly necessary to relieve the tension. I don't believe anyone is capable of getting these reactions from a man on first interview. You certainly have to break the ice or apply a shock absorber, to get that man to talk about something other than your job. I have heard executives interview men and go into the intricate details of their business, which was all Chinese to the man, and then say, "Well, that fellow didn't spark. He didn't get what I was talking about."

To that I have said, "Would you, if I talked Chinese to you?" I say, talk to the man about something he knows and is interested in, and probably you can bring out some of his philosophy and his viewpoint on business and life in general.

Next, sell your business to the applicant. I don't mean make him want to buy it. But I mean, throw the picture on the screen so that he can see what the business is all about, what it is trying to accomplish, where it is trying to go. Then, by building up confidence, you can make him sell himself to you. Get him off of his tailor-made, prepared story with which so many men come in to see you. They are bursting to get this out of their systems, but if you can hold that off and get to talking to them about something else, they will finally come around to it, and you will find out other sides to their make-up.

I always think that this whole proposition is a fifty-fifty one. In other words, you are trying to determine whether you want to buy what the candidate has to sell, and he in turn should be equally interested in finding out if he wants to buy what you have to sell. Unless both parties are satisfied with the transaction, unless it is a good buy for both sides,—emphasis on "both"—there is not going to be the full return on that payroll investment.

Seventh, and this is the hard part—decide. I cannot help you on this. Experience is the only thing that can come to your rescue, experience in having chosen men for similar jobs, experience in having studied their successes and failures, and then, having a thorough knowledge of the job requirements and as much information about the man as it is possible to obtain, and then putting these data one against the other.

Using Tests

You ask, perhaps, about using tests—psychological, trade and so forth—in selecting employees. All right, I say, if you are simply going to use them to throw more light on the qualifications, merely as an aid to selection; but surely not all right if they are to be used as the sole basis for judgment. There are no tests that I know of that will properly evaluate a man's emotions, that will properly evaluate a man's morals or his loyalty or integrity. There are no tests that I know of that will give you any indication of the effect of outside environment and surroundings and associations, on his relations with you; I refer to his home, to his hobbies, to the people with whom he associates. All of these have a direct bearing on the amount of work he is going to turn out for you, on certain days. There are no tests that I know of, that can tell you a man's financial condition, and what it really is, and how he runs his household expenses. You may ask these questions but you are not going to get the full truth. They have their effect.

Remember, too, that it is not only how much ability a man has, even assuming that we have tests that can measure that ability, but it is how he is going to apply this ability in certain situations, which you cannot wholly forecast. I would much rather have a man with fifty per cent ability that applies one hundred per cent of it, than a man with one hundred per cent, who only applies fifty. There are no tests that I know of that measure that factor of adaptability, as we might call it.

Teamwork and morale count. No tests that I know of can tell these, except trial. There may be indications from past experience, but I am speaking of tests. In the final analysis I will put my money on the executive who first analyzes and determines the job requirements; second, obtains all the information possible about the candidate; then, fully realizing his responsibility, weighs these data against requirements, and then decides. There is certainly no royal road to success by any fixed formula.

Beginning With the New Employee

Now we are ready to begin with the new employee. There are unquestionably many poor selections made for men on jobs. But I am inclined to believe from experience that, as many as there are of these failures, there are more failures due to poor training and handling of a man after he is on the job. Given a fair job of selection, an executive is going to get out of an employee just about what he puts into him. I like to look upon an employee as a working tool. A fellow said once that he bought a dumbbell to build muscle. It was a good tool for building muscle, but it did not build any muscle in the closet on the shelf, for this fellow —he did not use it. And it is the same with an employee. He may be a good employee, but unless he is used right he won't turn out work.

Why is it that we see many good starters, but poor finishers? In other words, there are employees who start out for a month, or three months, or six months, very successfully then pull up lame, go sour. Why is it? Evidently the employee had sufficient technical qualifications to start on the job. But something gummed up the works. I think there are more cases of employees not wanting to work on account of poor morale than not being able to do the work. And there are many cases of men being willing to learn, and able to assimilate teaching, if they could only be taught by the executives. But some executives seem to think that the best way to teach an employee to swim, figuratively speaking, is to throw him in the pond and let him fight his way out. That method is rather old-fashioned today. We find a lot of executives who are very zealous and earnest, in their attempts to give initial training to employees, and then the matter is allowed to drift. Continuous nursing is essential. Very often a man needs more training as he goes along in the job than he did at the beginning.

The Matter of Wages

Now we come to wages. There is only one wage policy and that is "buy production," and buy it with the same acumen that you would buy material, machinery or anything else. It is not how cheap you can buy a man, but how much he is going to produce, that counts. Good management certainly does not buy materials or buildings on price alone. True, price is considered, but it is weighed along with what they are going to get in return for the investment. I understand you gentlemen are interested in the cost accounting end of business. Surely you should realize and appreciate that wage is not the sole factor entering into the unit production costs. Material, overhead, selling, and other

similar items all enter into the determination of the point where profit begins, and labor costs are rarely the largest. It is not how much or how little you pay, but how much and what quality of production you get. I want to emphasize that.

A flat wage is not enough. Incentives are necessary; financial incentives, if you please. Bonus plans, if properly administered? Yes, but there are many dangers in the use of bonus plans. If a bonus plan is used so that a man is encouraged to turn out more work, and not put there to drive him beyond his capacity, then it is O.K. You have to have something to influence the will and desire of the worker to produce. He has got to be able to get more when and if he earns more, which means that recognition must be given and given promptly; and recognition, gentlemen, is not limited solely to salary. Don't forget that we are all human and a pat on the back, and other methods of personal encouragement, very often accomplish more than just a minor increase in wage.

Another thing about wage increases: It is surprising how much more you get for a dollar, that is given before a man demands an increase, than after. Wages naturally should be standardized. I don't need to point out to you the difficulties which are going to very quickly arise when you find a certain rate being paid for one type of production in one part of an organization, and another rate being paid for the same type of work in another.

I believe, in a great many operations—certainly more than we probably appreciate until we study—it is possible to set a unit standard of production, which is a reasonable amount of work which should be turned out for the wage given. And then, all work that is produced above that standard should be paid for and paid for bountifully, because every dollar made that way for the company is velvet.

Next thing, I have seldom seen cases where the method of budgeting was applied to payroll expense, where the personnel requirements of the business were budgeted, and planned in advance. Certainly if I were an auditor of a company, or a comptroller, I would insist on the payroll being budgeted for the coming year.

Physical Environment and Productivity

Next, there is an intimate relation between physical environment and productivity. As the late Mr. Edward Bok used to say to me, "You cannot do a good print job up a back alley," which was his way of emphasizing the necessity of providing good working conditions, working conditions not alone clean and with adequate room, light and so forth, but, if you please, working conditions which cheer up the man, which tend to make him optimistic. It is surprising to see the change in employees who come from a poor section of town, brought in to an office or a plant, very finely equipped, and watch them take on some of the color; you might say, of the place. It reflects almost immediately in the way they dress, in the way they carry themselves. There is no question about the fact that we have been short, in American industry, in appreciating the psychological factors affecting the morale of the employee. I am a great believer in the lessons which can be readily learned from athletics.

I officiate occasionally in inter-collegiate football, and I don't know how many times I have been impressed with the fact that the major college teams today are just about on a par, as far as football playing ability is concerned. And the team that is going to win next Saturday, is generally the one where the coach or those in charge have been instrumental in getting the right mental attitude. That is why your dope is upset and will continue to be upset, just as long as you have inter-collegiate contests such as we have today. It has come down to a matter of morale. In baseball we see it. The Washington Baseball Club carries along Nick Altrock. He cannot play ball; he is of some value, of course, to the spectators, in his hippodroming, but he is carried along primarily to keep players from getting blue, to keep their minds from worrying about the game when they are off the field—a morale job.

Now, if it works in the show and amusement business, if it works in athletics,—why, I was behind the lot in Ringling Brothers' Tent, as they called it, last Spring, and I was perfectly amazed, perfectly astounded, at the morale of the circus people. And I thought, well, if an industry, a business, a sales force, could only get one fraction of the devotion to the task that these people have, how they would put it over! I actually saw the champion aerial artist of Ringling Brothers, carried over to the entrance of the Big Tent to put on her act, and then I watched her act, and watched her when she came off—just exhausted.

And yet, we have people in business who will stay away on account of the weather. There is nothing that makes those show people do that, in the way of pay. There are people in business getting just as much pay and more. But those show people would lose a leg rather than miss their act.

A Fundamental Relation

There is a fundamental relation between employee and supervisor, a relationship which no system, or no one, that I know of, has ever been able to find a substitute for. It is the relation that can be handled only by the supervisor or the one in charge. It cannot be proxied. It involves the treatment of that employee, associating with him, studying his whims and temperament, from the time he is selected for the job until he finally leaves it—all the time he is holding down the job, in fact. It means that this executive must inform this new employee about the business—not hand him a printed bulletin—tell him about it. Tell him about what is to be expected of him, and what he may expect. A publication is good, yes, but not essential. The personal word is better, every time. It certainly is a whole lot better to have the boss come down to where you are working some day and tell you with a good deal of pride that "we have an order from so-and-so," than to have you wait until the end of the month and probably read it in the employees' magazine, or in the paper some place.

Pride in the business is something that does not come of itself. Pride in the business can only come by having some interest in the business. I remember very distinctly, during the War, when I served the War Labor Board, going down to the Naval Aircraft Plant in South Philadelphia, where I saw a very fine old cabinet maker craftsman, (and believe me, they were needed then to make airplane propellers), quitting his job in tears, because he was just working at the bench turning out a propeller, and the supervisor in charge did not have enough sense to let him go down to the field and see his propeller work on the plane. He had always been used to doing cabinet work, having the customer come in, and feeling the thrill of seeing a customer satisfied with his product. But there he was, put into the throes of quantity production, and he had lost that ultimate contact with the customer.

A Matter of Loyalty

Morale is a matter of loyalty as much as anything else, and I don't need to tell you that to get loyalty an executive must give loyalty. If he is not going to champion his employees and look out for their interests, they are not going to look out for his. The modern executive must, in my opinion, be what amounts to a public relations man. He must certainly be sensible of the influences of public opinion. He must realize that favorable public opinion is an asset to his institution. He must appreciate that favorable public opinion can only be maintained by developing that word-of-mouth advertising that comes through loyal employees. You have no control over the damage that an employee can do to you by letting his tongue wag when he gets outside of your door. It is the talk over the back fence, the influence of Mrs. Jones on Mrs. Smith, that determines to a large extent the attitude and frame of mind with which an employee approaches your job. I am a great believer in the home influence, particularly among younger employees.

Now, this personnel problem is not limited solely to the rank and file. Only a few days ago, with one of my clients, I saw a personnel problem which at first glance would not be classed as one.

The two heads of this business are partners and I have been working with them in a consulting way for over a year and a half. Let me tell you that seventy per cent of the time I have spent with them has been devoted to keeping these two fellows away from each other's throats. They are fighting all the time. They are both good men, but they just naturally clash, and that business is loaded with real expense as a consequence. It has been interesting to me, in my work also, to note how many times what is, on the surface, labeled a sales problem or a distribution problem, we will say, simmers down, on a careful analysis, to a pure problem of personnel.

About a year ago I remember being called into a situation by a bank, where they were a little worried about the eggs they had in a certain basket, thought somebody was stepping on the eggs, and asked me to look into the situation. They said the distribution was all shot. I got on the train and went out and studied the system of distribution first hand, to see if I could find out any points of weakness. It was not very long until I saw that the whole problem simmered down to that of not having the right type of men contacting those distributors. Here was a product that was technical, highly technical, and yet there was not a sales engineer on the force. The salesmen had been in the drug field, the dry goods and grocery fields and everything else. What they needed was a sales manager, in the first place, who was a technical man, and a force under him who were technical in education and experience.

Coming back to this matter of treatment of employees, management can offset many shortcomings such as inadequate wages, poor conditions, with proper treatment. I don't advocate that as a substitute by any means, but I merely cite it to show you how effective it is. Where you find employees being treated properly they will stand for a great many shortcomings. Big business today, as we know it, tends to minimize the personal contact with the big boss. This breeds misunderstanding. It is something that cannot be delegated, and so many managers say, "Well, I am too busy to take care of these personnel matters." Let me assure you that there is nothing more important, and it cannot be made a mail-order proposition. It has to be made personal.

Next, we come to the matter of attendance control, another personnel problem. So many times we hear the statement—"Well, if an employee is absent we are not paying him and it doesn't cost us anything." It most certainly does cost. I only need to point out to you that when a foreman or supervisor reports in the morning and finds one or two of his people missing, it is going to take a certain amount of his time to adjust matters. He doesn't know when they are going to show up, whether they are going to be back tomorrow or not. It disrupts the work of others, who have to make up the lost time. It causes all kinds of losses down the line. It is difficult for any cost accountant to determine or calculate them, but they are there. And, it is surprising how many executives carry more people on their payroll than they really need, in order to assure themselves of having an adequate working complement there every day. In other words, if we could have one hundred per cent attendance in the average organization, each day, I will venture the statement that you could remove almost ten per cent off the payroll over the year. That is the insurance that is carried, an overhead charge, a fixed charge against poor attendance.

Welfare work, unfortunately, has fallen into poor repute, and probably justly so, because too many employers have been doing these things to put up a pretty hospital, or a pretty village, or something of the sort. Any plan of that kind, or something such as providing group insurance, should be measured by the hard and fast standard of dollars and cents. Is it going to contribute to the increased productivity of the employee?

Financial Problems of Employees

I certainly believe that management should be sympathetic to the financial problems of employees. Certainly a mind under financial stress cannot properly direct the body toward good productivity.

I certainly believe that management should encourage thrift for a similar reason.

I certainly believe that management should recognize length of service. But, an employee should not be paid purely for length of service. We are not buying "time" with our wage. We are buying production. And of course we should readily expect that length of service should increase a man's efficiency. I believe length of service can be recognized with such privileges as extra vacation, allowance of time on special request, preferential selection of vacation period.

Now, this has been a rather detailed talk, and probably you will say there is nothing new in it. It is quite true that there is nothing new in it. I think that has been the trouble in approaching this problem—that there has been an attempt to build a hokus-pokus around it—some mystic bag of tricks, that some expert is supposed to have with which he can come in and solve these problems. To my belief, no such expert exists. Any organization can do any of these things for itself, if it will really do it.

In the final analysis, I believe that the real personnel expert is the supervisor or foreman or manager on the job who appreciates that he is dealing with human beings, their temperaments and emotions, and handles the problem with humanics rather than mechanics.

I thank you. (Applause)

PRESIDENT HERSEY—I want to extend our appreciation for your excellent talk, Mr. Morgan, and I am sorry that time does not permit the usual discussion, as we are scheduled at this time for a joint meeting with the Salesmen's Association. We appreciate very much your coming here to give us this excellent address. (Applause)

Only One Timber Drive on Hudson River

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., March 10, 1930.—The only timber drive to be conducted on the Hudson River during the coming spring will be staged by Finch, Pruyn & Co., which owns a large tract in the vicinity of Newcomb. Announcement to this effect was made this week at the annual meeting of the Hudson and Schroon River Drive Associations held in this city. Prominent paper manufacturers are among those elected to serve on the committees of these organizations for the ensuing year. They are as follows:

Hudson River Drive Association—John Donohue, North River; F. B. Wilson, Glens Falls; Thomas R. Remsen and Lawrence B. Griffin, Hudson Falls; secretary and treasurer, Elmer Smith, Glens Falls.

Schroon River Drive Association—F. B. Wilson, Glens Falls; John Donohue, North River; Daniel S. Griffin, Hudson Falls; Philip E. Rice, Warrensburg; secretary and treasurer, Elmer E. Smith.

Hudson River Boom Company—F. B. Chapman and F. B. Wilson, Glens Falls; Daniel S. Griffin and Thomas R. Remsen, Hudson Falls; secretary and treasurer, Elmer E. Smith; treasurer, E. J. Simmons, Glens Falls.

Carter, Rice & Co. Salesmen Celebrate

PORTLAND, Ore., March 6, 1930.—James W. Murphy, manager of the Portland branch of Carter, Rice & Co., and his sales force, celebrated their victory in the national sales contest recently won by the local office with a banquet February 20 at which time Charles H. Beckwith, Pacific Coast manager for the company, was the honored guest. The Portland office led all branches in the contest which started January 1, 1929, and ended December 31, and were awarded a silver cup as a trophy.

This was the first year for a contest of this kind and the Portland office feels unusually jubilant over the award and the record of salesmanship it represents. The cup does not become a permanent possession until it has been won three times by the same office, although these awards need not be won consecutively.

Mr. Beckwith and Mr. Murphy both gave speeches at the banquet in which high honor was rendered to those who were active in bringing this trophy to the Portland office through their sales efforts.

COST SECTION

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MARCH 8, 1930

SUMMARY

Cigarette paper .....2,055 cs.
Wall paper .....159 bls., 77 cs.
Paper hangings .....94 bls., 51 cs.
Drawing paper .....4 cs.
Filter papers .....136 cs.
News print .....6,479 rolls
Printing paper .....68 bls., 99 cs.
Wrapping paper .....8 bls., 74 cs.
Fancy paper .....2 bls.
Baryta coated paper .....241 cs.
Surface coated paper .....126 cs.
Metal paper .....9 cs.
Photo paper .....3 cs.
Colored paper .....22 cs.
Decalcomania paper .....24 cs.
Envelopes .....15 cs.
Writing paper .....1 cs.
Tissue paper .....9 cs.
Wafer paper .....11 cs.
Parchment paper .....14 cs.
Litmus paper .....2 cs.
Stencil paper .....4 cs.
Kraft paper .....573 rolls, 111 bls.
Cardboard .....13 rolls, 5 bls.
Miscellaneous paper .....300 rolls, 6 bls., 156 cs.

CIGARETTE PAPER

American Tobacco Co., Sarcoxie, Bordeaux, 1,000 cs.
De Manduit Paper Corp., Sarcoxie, St. Nazaire, 622 cs.
P. J. Schweitzer, Pres. Polk, Marseilles, 142 cs.
Max Spiegel & Son, Pres. Polk, Genoa, 35 bls.
Liggett & Myers Tobacco Co., Minnesota, Bordeaux, 228 cs.
Liggett & Myers Tobacco Co., Ile de France, Havre, 63 cs.

WALL PAPER

W. H. S. Lloyd & Co., Maryland, London, 4 bls., 3 cs.
——, Amer. Merchant, London, 3 bls.
F. J. Emmerich, G. Washington, Bremen, 43 bls., 3 cs.
Equitable Trust Co., St. Louis, Hamburg, 59 cs.
M. Schmidt, St. Louis, Hamburg, 1 cs.
——, St. Louis, Hamburg, 6 bls.
Globe Shipping Co., St. Louis, Hamburg, 4 bls.
F. J. Emmerich, St. Louis, Hamburg, 21 bls., 2 cs.
F. J. Emmerich, Ausonia, Southampton, 3 bls.
F. A. Binder, Dresden, Bremen, 3 bls., 1 cs.
Globe Shiping Co., Dresden, Bremen, 1 ble.
Kensington Wallpaper Co., Dresden, Bremen, 6 cs.
I. E. Bernard & Co., Pennland, Antwerp, 26 pkgs.
A. C. Dodman, Jr., Inc., Berengaria, Southampton, 8 bls.
A. L. Diament & Co., Berengaria, Southampton, 1 cs.
Thomas & Pierson, Berengaria, Southampton, 1 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnekahda, London, 72 bls., 10 cs.
A. C. Dodman, Jr., Inc., Antonia, Liverpool, 20 bls., 17 cs.
A. C. Dodman, Jr., Inc., Baltic, Liverpool, 1 ble., 22 cs.
Whiting & Patterson Co., Inc., Berengaria, Southampton, 2 cs., 1 ble.

DRAWING PAPER

J. Henschel & Co., G. Washington, Bremen, 2 cs.
Favor Ruhl & Co., Ile de France, Havre, 2 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Minnekahda, London, 14 cs.
E. Fougera & Co., Minnesota, Bordeaux, 122 cs.

NEWS PRINT

W. H. Bell, Markland, Liverpool, N. S., 4,169 rolls.
Parsons & Whittemore, Inc., Westfalen, Bremen, 565 rolls.
——, Westfalen, Bremen, 78 rolls.
Parsons & Whittemore, Inc., Schenectady, Kotka, 164 rolls.
——, Schenectady, Kotka, 546 rolls.
Perkins Goodwin & Co., St. Louis, Hamburg, 166 rolls.
——, Bergensfjord, Oslo, 236 rolls.
Parsons & Whittemore, Inc., Dresden, Bremen, 191 rolls.
Stora Kopperberg Corp., Gripsholm, Gothenburg, 84 rolls.
Scripps Howard Supply Co., Gripsholm, Gothenburg, 280 rolls.

PRINTING PAPER

Walker, Goulard, Plehn Co., G. Washington, Bremen, 9 bls.
C. Steiner, Dresden, Bremen, 5 cs.
Oxford University Press, Antonia, Liverpool, 7 cs.
International Forwarding Co., Gaasterdyk, Rotterdam, 11 cs.
E. Dietzgen & Co., Gaasterdyk, Rotterdam, 71 cs.
Japan Paper Co., Berengaria, Southampton, 5 cs.
J. I. Bernitz, Ohio Maru, Hamburg, 59 bls.

WRAPPING PAPER

Wilkinson Bros. & Co., Inc., St. Louis, Hamburg, 5 bls.
Steffens Jones Co., Pennland, Antwerp, 10 cs.
Sylvania Industrial Corp., Pennland, Antwerp, 64 cs.
Quaker City Bag Co., Pennland, Antwerp, 3 bls.

FANCY PAPER

Hensel, Bruckman & Lorbacher, Ile de France, Havre, 2 bls.

BARYTA COATED PAPER

J. H. Schroeder Banking Corp., Dresden, Bremen, 226 cs.
——, Dresden, Bremen, 15 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Pennland, Antwerp, 126 cs.

METAL PAPER

K. Pauli Corp., Dresden, Bremen, 9 cs.

PHOTO PAPER

J. H. Schroeder Banking Corp., Dresden, Bremen, 3 cs.

COLORED PAPER

L. Schulman Co., Dresden, Bremen, 9 cs.
S. Gilbert, Dresden, Bremen, 13 cs.

DECALCOMANIA PAPER

C. W. Sellers, G. Washington, Bremen, 4 cs.
C. W. Sellers, Dresden, Bremen, 12 cs.
L. A. Consmiller, Dresden, Beremen, 8 cs.

ENVELOPES

J. Beckhard, Dresden, Bremen, 15 cs.

WRITING PAPER

Globe Shipping Co., St. Louis, Hamburg, 1 cs.

TISSUE PAPER

G. W. Sheldon & Co., Amer. Merchant, London, 5 cs.
P. J. Schweitzer, Pres. Polk, Marseilles, 2 cs.
W. J. Byrnes & Co., Berengaria, Southampton, 2 cs.

WAFER PAPER

W. L. Haas, Gaasterdyk, Rotterdam, 11 cs.

PARCHMENT PAPER

S. Bienfang, Gaasterdyk, Rotterdam, 14 cs.

LITMUS PAPER

Pfalz & Bauer, St. Louis, Hamburg, 2 cs.

STENCIL PAPER

International Forwarding Co., St. Louis, Hamburg, 4 cs.

KRAFT PAPER

——, Bergensfjord, Oslo, 573 rolls, 111 bls.

CARD BOARD

R. Wilson Paper Corp., Gaasterdyk, Rotterdam, 5 bls., 13 rolls.

MISCELLANEOUS PAPER

Japan Paper Co., Pres. Polk, Genoa, 37 cs.
E. E. Lloyd Paper Co., Pres. Polk, Genoa, 3 cs.
Wilkinson Bros. & Co., Inc., St. Louis, Hamburg, 6 bls.
Fidelity Trust Co., Dresden, Bremen, 300 rolls.
Hensel, Bruckman & Lorbacher, Dresden, Bremen, 6 cs.
Keller Dorian Paper Co., Ile de France, Havre, 26 cs.
Japan Paper Co., Ile de France, Havre, 11 cs.
Vogue Hats, Ile de France, Havre, 2 cs.
Kadri Bros., Ile de France, Havre, 2 cs.
E. H. Sargent, Gripsholm, Gothenburg, 6 cs.
Japan Paper Co., Gripsholm, Gothenburg, 6 cs.
Defiance Sales Co., Gaasterdyk, Rotterdam, 10 cs.
Winter, Wolff & Co., Gaasterdyk, Rotterdam, 28 cs.
J. Beckhard & Co., Gaasterdyk, Rotterdam, 3 cs.
Japan Paper Co., Gaasterdyk, Rotterdam, 3 cs.
Y. Yabuki & Co., Tatsuno Maru, Kobe, 5 cs.
F. C. Strype, Tatsuno Maru, Yokohama, 8 cs.

RAGS, BAGGINGS, ETC.

R. M. Gray, Inc., Eberstein, Rotterdam, 93 bls. flax waste.
A. Bernstein, Eberstein, Rotterdam, 27 bls. bagging.
Chemical Bank & Trust Co., Maryland, London, 84 bls. rags.
Chemical Bank & Trust Co., Westfalen, Bremen, 38 bls. new cuttings.
E. J. Keller Co., Inc., Westfalen, ——, 47 bls. rags.
Irving Trust Co., West Eldara, Antwerp, 45 bls. rags.
Darmstadt, Scott & Courtney, West Eldara, Antwerp, 51 bls. cotton waste.
A. W. Fenton, Inc., Sac City, Rotterdam, 228 bls. rags.
J. C. Van Stallie, Sac City, Rotterdam, 10 bls. rags.
E. Gross, Sac City, Rotterdam, 37 bls. rags.
Kidder Peabody Acep. Corp., Sac City, Rotterdam, 8 bls. rags.
New York Trust Co., Minnekahda, London, 45 bls. rags.
Castle & Overton, Inc., United States, Copenhagen, 49 bls. new cuttings.
International Germanic Trust Co., Hellig Olav, Copenhagen, 275 bls. bagging.
Atlas Waste Mfg. Co., Coamo, San Juan, 52 bls. rags.
Banco Com'l Italiane Trust Co., Nordvard, Leghorn, 419 bls. rags.
S. Birkenstein & Son, Nordvard, Barcelona, 101 bls. rags.
Robert Blank, Nordvard, Valencia, 192 bls. rags.
Chemical Bank & Trust Co., Dresden, Bremen, 59 bls. thread waste.
——, Dresden, Bremen, 37 bls. rags.
Van Oppen & Co., Minnesota, Havre, 118 bls. rags.
——, Minnesota, Havre, 66 bls. rags.
International Germanic Trust Co., Minnesota, Havre, 119 bls. bagging.
Merchants National Bank, Minnesota, Havre, 37 bls. rags.
T. D. Downing & Co., Cameronia, Glasgow, 198 bls. paper stock.
American Express Co., Cameronia, Glasgow, 33 bls. paper stock.
Royal Manfg. Co., J. Jadot, Antwerp, 35 bls. cotton waste.
International Acceptance Bank, Baltic, Liverpool, 31 bls. rags.
International Germanic Trust Co., Gaasterdyk, Rotterdam, 26 bls. rags.
Royal Manfg. Co., Gaasterdyk, Rotterdam, 69 bls. cotton waste.
D. M. Hicks, Inc., Pipestone County, Dunkirk, 34 bls. flax waste.
V. Galaup, Pipestone County, Havre, 12 bls new cuttings.
E. J. Keller Co., Inc., Pipestone County, —— 44 bls. new cuttings.

(Continued on page 70)

Pulp Mill Knives for
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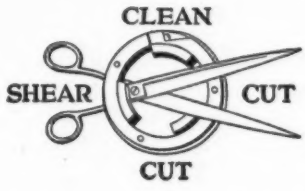

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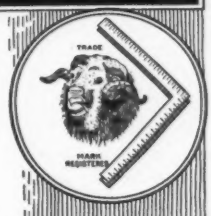


THE WATERBURY FELT CO., SKANEATELES FALLS, N.Y.

Imports of Paper and Paper Stock

(*Continued from page 68*)

R. M. Gray, Inc., Clairton, Manchester, 89 bls. paper stock.
Amderutra, ——, Hagen, Hamburg, 138 bls. rags.
Hoffman Lion Mills, Tatsuno Maru, Kobe, 108 bls. rags.

OLD ROPE

Brown Bros. & Co., St. Louis, Hamburg, 33 bls., 11 coils.
Brown Bros. & Co., Cabo Santa Maria, Pasages, 84 coils.
S. Birkenstein Son, Cabo Santa Maria, Pasages, 97 rolls.
N. E. Berzen, Nordvard, Barcelona, 50 coils.
Furness Withy & Co., London Exchange, London, 113 coils.

CASEIN

Crawford Keen Co., Northern Prince, Buenos Ayres, 1,333 bags, 79,980 kilos.
National City Bank, Northern Prince, Buenos Ayres, 717 bags, 40,020 kilos.
T. M. Duche & Sons, Northern Prince, Buenos Ayres, 834 bags, 50,040 kilos.
A. Hurst & Co., Northern Prince, Buenos Ayres, 1,200 bags, 159,759 kilos.
A. Hurst & Co., Pipestone County, Havre, 213 bags.

WOOD PULP

Bulkley, Dunton & Co., Bockenheim, ——, 1,250 bls. wood pulp.
——, Bockenheim, Hernosand, 1,350 bls. sulphate, 225 tons.
——, Bockenheim, Hernosand, 5,950 bls. sulphite, 1,025 tons.
M. Gottesman & Co., Inc., Sac City, Rotterdam, 1,000 bls. wood pulp, 100 tons.
Pagel, Horton & Co., Inc., Ragnhildsholm, Gefle, 1,750 bls. sulphite.
Stora Kopperberg Co., Ragnhildsholm, Gefle, 1,275 bls. wood pulp.
M. Gottesman & Co., Inc., Ragnhildsholm, Stockholm, 900 bls. sulphite.
Bulkley, Dunton & Co Ragnhildsholm, ——, 3,500 bls. wood pulp.
Atterbury Bros., Hellig Olav, Oslo, 1,000 bls. wood pulp, 200 tons.
Castle & Overton, Inc., St. Louis, Hamburg, 414 bls. wood pulp, 62 tons.
——, St. Louis, Hamburg, 130 bls. wood pulp, 26 tons.
Chemical Bank & Trust Co., Dresden, Bremen, 256 bls. wood pulp.
Johanson, Wales & Sparre, Inc., Gripsholm, Gothenburg, 600 bls. sulphate.
Perkins Goodwin & Co., Gripsholm, Gothenburg, 127 bls. sulphate.
Castle & Overton, Inc., Hagen, Hamburg, 981 bls. wood pulp, 147 tons.
J. Andersen & Co., Ohio Maru, Hamburg, 300 bls. wood pulp, 60 tons.

WOOD PULP BOARDS

Lagerloef Trading Co., Lagaholm, Kotka, 219 rolls, 220 bls.
Wilkinson Bros. & Co., Inc., Gripsholm, Gothenburg, 40 bls.

WOOD FLOUR

A. Hurst & Co., Gripsholm, Gothenburg, 120 bags.
State Chemical Co., Gaasterdyk, Rotterdam, 400 bags.

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 8, 1930

E. J. Keller Co., Inc., Nooderdyk, ——, 331 bls. rags.
E. J. Keller Co., Inc., Bellepline, ——, 77 bls. bagging.
E. J. Keller Co., Inc., Lorain, ——, 71 bls. rags.
Pagel, Horton & Co., Inc., Lagaholm, Stockholm, 625 bls. sulphate.
Lagerloef Trading Co., Lagaholm, Wiborg, 7,434 bls. sulphite.
Lakerloef Trading Co., Lagaholm, Kotka, 11,103 bls. sulphite.
Lagerloef Trading Co., Lagaholm, Kotka, 5,248 bls .sulphate.
Lagerloef Trading Co., Lagaholm, Kotka, 3 rolls, 164 bls. wood pulp boards.
Castle & Overton, Inc., Sarcoxie, Bordeaux, 668 bls. rags.
True & McClelland, Sarcoxie, Bordeaux, 56 bls. rags.
J. A. Steer & Co., Sarcoxie, Bordeaux, 95 bls. rags.
S. E. Ingber, Sarcoxie, Bordeaux, 196 bls. rags.
Katzenstein & Keene, Inc., Sarcoxie, Bordeaux, 548 bls. rags.
G. Mathes & Co., Sarcoxie, Bordeaux, 141 bls. rags.
Equitable Trust Co., Sarcoxie, Bordeaux, 71 bls. rags.
P. Berlowitz, Sarcoxie, St. Nazaire, 846 bls. rags.
Castle & Overton, Inc., Sarcoxie, St. Nazaire, 432 bls. rags.
Equitable Trust Co., Sarcoxie, St. Nazaire, 50 bls. rags.
E. J. Keller Co., Inc., Sarcoxie, ——, 58 bls. rags.
Castle & Overton, Inc., Westfalen, Bremen, 245 bls. rags.
Chemical Bank & Trust Co., Westfalen, Bremen, 255 bls. wood pulp.
Chemical Bank & Trust Co., Westfalen, Bremen, 74 coils old rope.
——, Westfalen, Bremen, 217 bls. rags.
Union Waste Co., Westfalen, Bremen, 29 bls. thread waste.
Parsons & Whittemore, Westfalen, Bremen, 107 rolls news print.
International Germanic Trust Co., Westfalen, Bremen, 482 bls. rags.
Brown Bros. & Co., Westfalen, Bremen, 27 bls. rags.
Bulkley, Dunton & Co., Westfalen, ——, 2,300 bls. wood pulp.
Castle & Overton, Inc., West Eldara, Antwerp, 581 bls. rags.
A. J. Holman Co., West Eldara, Antwerp, 230 cs. printing paper.
Phila. National Bank, West Eldara, Antwerp, 513 bls. rags.
Equitable Trust Co., West Eldara, Antwerp, 97 bls. rags.
J. M. Hagy Waste Works, Sac City, Rotterdam, 64 bls. rags.
C. W. Millar & Co., Sac City, Rotterdam, 278 cs. old rope.
S. Spector & Co., Sac City, Rotterdam, 32 bls. old carpets.
S. E. Ingber, Sac City, Rotterdam, 341 bls. rags.
E. J. Keller Co., Inc., Sac City, ——, 73 bls. rags.
Corn Exchange Natl. Bank, Minnesota, Havre, 26 bls. rags.
Guaranty Trust Co., Minnesota, Havre, 108 bls. rags.
Equitable Trust Co., Minnesota, Havre, 88 bls. rags.
E. J. Keller Co., Inc., Minnesota, ——, 108 bls. rags.
E. J. Keller Co., Inc., Executive, ——, 219 bls. rags.
Bank of New York, Cabo Santa Maria, Bilbao, 236 bls. rags.

BOSTON IMPORTS

WEEK ENDING MARCH 8, 1930

J. B. Moors & Co., Maryland, London, 388 bls. rags.
Brown Bros. & Co., Maryland, London, 92 bls. waste paper.
Baring Bros. & Co., Maryland, London, 198 bls. waste paper.
G. M. Graves Co., Maryland, London, 229 bls. waste paper.
Darmstadt, Scott & Courtney, Maryland, London, 18 bls. rags.
Crocker Burbank Co., Maryland, London, 651 bls. waste paper.
Forte Dupee Sawyer, West Eldara, Antwerp, 34 bls. rags.
E. Butterworth & Co., Inc., West Eldara, Antwerp, 89 bls. bagging.
E. Butterworth & Co., Inc., West Eldara, Antwerp, 162 bls. flax waste.
E. Butterworth & Co., Inc., West Eldara, Antwerp, 266 bls. old pickers.
True & McClelland, West Eldara, Antwerp, 49 bls. rags.
1st Natl. Bank of Boston, West Eldara, Antwerp, 14 bls. thread waste.
Brown Bros. & Co., West Eldara, Antwerp, 10 bls. thread waste.
Brown Bros. & Co., West Eldara, Antwerp, 75 coils old rope.
Baring Bros. & Co., West Eldara, Antwerp, 12 bls. thread waste.
Campbell Ward & Co., West Eldara, Antwerp, 10 bls. thread waste.
French Worsted Co., West Eldara, Antwerp, 47 cs. paper tubes.
American Express Co., West Eldara, Antwerp, 108 rolls paper.
——, Schenectady, Kotka, 2,046 bls. sulphate, 375 tons.
——, Schenectady, Kotka, 1,868 bls. sulphite, 312 tons.
Lakerloef Trading Co., Schenectady, Helsingfors, 452 bls. sulphite, 79 tons.
E. Butterworth & Co., Inc., Kearny, Avonmouth, 266 bls. paper stock.
Phila. National Bank, Kearny, Avonmouth, 105 bls. paper stock.
G. M. Graves Co., Pipestone County, Dunkirk, 87 bls. rags.
E. Butterworth & Co., Inc., Pipestone County, Dunkirk, 159 rolls rope.
American Express Co., Pipestone County, Havre, 3 cs. wall paper.
Hollingsworth-Vose Co., Pipestone County, Havre, 116 bls. bagging.
Irving Trust Co., Pipestone County, Havre, 63 bls. string waste.
C. Belsky, Pipestone County, Havre, 83 bls. rags.
Castle & Overton, Inc., Pipestone County, Havre, 62 bls. rags.
G. M. Graves & Co., Pipestone County, Havre, 120 bls. rags.
International Trust Co., Pipestone County, Havre, 155 bls. bagging.
Baring Bros. & Co., Pipestone County, Havre, 18 bls. new cuttings.
Brown Bros. & Co., Marengo, Hull, 198 coils old rope.
Bird & Son, Marengo, Newcastle, 243 bls. rags.
1st Natl. Bank of Boston, Corsican Prince, Buenos Ayres, 334 bags casein.

BALTIMORE IMPORTS

WEEK ENDING MARCH 8, 1930

Bulkley, Dunton & Co., Noorderdyk, ——, 900 bls. wood pulp.
Bulkley, Dunton & Co., Toronto, ——, 400 bls. wood pulp.
Bulkley, Dunton & Co., Thyra, ——, 6,750 bls. wood pulp.
National City Bank, Maryland, Antwerp, 156 bls. rags.
Congoleum Nairn Co., Sarcoxie, Bordeaux, 299 bls. rags.
Congoleum Nairn Co., Sac City, Rotterdam, 123 bls. rags.
Bulkley, Dunton & Co., Sac City, ——, 121 bls. wood pulp.
Bulkley, Dunton & Co., Ragnhildsholm, ——, 1,500 bls. wood pulp.
M. Gottesman & Co., Inc., Ragnhildsholm, Stockholm, 1,200 bls. sulphite.
Pagel, Horton & Co., Inc., Ragnhildsholm, Gefle, 2,000 bls. sulphite.
Price & Pierce, Ltd., Ragnhildsholm, Gefle, 3,680 bls. sulphite.
National City Bank, Minnesota, Havre, 198 bls. rags.

NORFOLK IMPORTS

WEEK ENDING MARCH 8, 1930

Bank of New York, Sac City, Rotterdam, 401 bls. bagging.
E. J. Keller Co., Inc., City of Alton, ——, 68 bls. rags.
E. J. Keller Co., Inc., Hannover, ——, 40 bls. rags.

PORTLAND IMPORTS

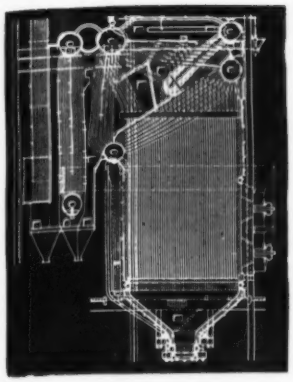
WEEK ENDING MARCH 8, 1930

Stora Kopperberg Corp., Bockenheim, Skutskar, 2,500 bls. wood pulp.
Perkins Goodwin & Co., Bockenheim, Sundsvall, 3,000 bls. sulphite.
Pagel, Horton & Co., Inc., Bockenheim, Gefle, 2,500 bls. sulphite.
——, Bockenheim, Hernosand, 3,090 bls. sulphite, 515 tons.

NEWPORT NEWS IMPORTS

WEEK ENDING MARCH 8, 1930

M. Gottesman & Co., Inc., Bockenheim, Iggesund, 1,000 bls. sulphate, 200 tons.
Perkins Goodwin & Co., Bockenheim, Sundsvall, 2,500 bls. sulphate.
——, Bockenheim, Hernosand, 5,178 bls. sulphate, 863 tons.
——, Bockenheim, Hernosand, 600 bls. sulphite.



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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, March 12, 1930.

Conditions in the local paper market were fairly satisfactory during the past week. Most of the standard grades of paper were in seasonal request. Sales forces of the leading paper houses are conducting a strenuous campaign at present and expansion of business is anticipated in the near future. Prices are holding to schedule, in most instances.

There have been no further developments reported in the news print price situation. Statistics gathered by the News Print Service Bureau show that production in the United States and Canada was maintained at 70 per cent of capacity in the week ended February 22. Offerings are being freely absorbed by the publishers and stocks in hand are not excessive.

The paper board market is practically unchanged. Demand for the various grades is fairly active but prices are still considered too low. Demand for the various grades of fine paper is persistent. Prices are holding to previously quoted levels. The coarse paper market is spotty. Sulphite wrapping paper is in a strong statistical position but the kraft situation is still unsatisfactory.

Mechanical Pulp

Production of ground wood is being maintained in sufficient volume to take care of current requirements although there are no excess accumulations. Demand for both domestic and imported mechanical pulp is about normal for the time of the year. Prices are holding to previously quoted levels and there is little talk of concessions around.

Chemical Pulp

Steadiness prevails in the chemical pulp market. Although demand for the various grades of imported and domestic chemical pulp was only moderate in January and February, there are signs of improvement in the near future. The volume of orders being booked is increasing and inquiries for future business are more numerous than of late. Prices remain unaltered.

Old Rope and Bagging

The old rope market was moderately active during the past week. Both domestic and imported old manila rope are in fair request. Mixed strings are moving in seasonal volume. Prices are generally unchanged. Some improvement was noticed in the bagging market. Gunny scrap is in somewhat better demand and scrap bagging is steady. Prices are holding to schedule.

Rags

Paper mill interest in the domestic rag market is becoming more manifest. Cotton cuttings are in better request. The demand for linen rags is expanding. Mixed rags are rather quiet at present. Prices of the various grades of domestic rags are steady. The imported rag market is rather quiet with prices generally unchanged.

Waste Paper

The board mills are beginning to display a little more interest in the paper stock market. Inquiries for the lower grades of waste paper are more frequent than for some time past and trading should become brisker in the near future. The higher grades of paper stock continue steady, with prices holding to previously quoted levels, and reports of shading infrequent.

Twine

Most of the business transacted in the local twine market during the past week was along routine lines. While the demand for the various grades was not particularly heavy there are signs of decided improvement with the approach of the Easter season. Prices are holding up very well despite keen competition.

Boston Paper Market In Sound Position

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 10, 1930.—The average condition of the Boston paper market is apparently favorable with a good outlook. Some substantial orders have been placed. Coarse paper is in from fair to good demand. Specialty lines are moving fairly well, and dealers look for more activity in the not far distant future.

The box board market has shown some improvement, with a moderate amount of tonnage moving. Quotations are firm, but price levels are regarded as altogether too low. Box manufacturers have been securing more business than they were, but it could be a lot better.

Conditions in paper stock are not especially good. In some quarters the demand this month so far has dropped off from that during January and February. Trading is spasmodic. While the paper and box markets are fair, production is somewhat restricted. Mixed paper continues quiet, with other grades weak and the demand very much curtailed. Roofing rags are decidedly dull. Few consumers, if any, care to buy ahead now, so that the dealers are obliged to carry the bag. Prices remain at the same levels and it is said that they can't go lower.

Wants I. P. To Continue at Glens Falls

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., March 3, 1930.—Following receipt of a petition from residents it was voted by the Common Council to open an investigation into business conditions in an attempt to induce the International Paper Co. continuing operations at its South Glens Falls plant. The action follows an announcement by officials of the news print division that the plant would be closed for an indefinite period early in March. The Veldown Company, a subsidiary of International, has also operated on reduced schedules for some time past.

Since 1922 the South Glens Falls plant has operated only at intervals and many employees were forced to seek employment elsewhere. Many returned when news print manufacture was resumed in January and they are now faced with unemployment after relinquishing other jobs.

Holyoke Cost Meeting

Thomas J. Burke, secretary-treasurer of the Cost Association of the Paper Industry, will be the principal speaker at a meeting of the Connecticut Valley Division of the Cost Association of the Paper Industry, which will be held at the Hotel Nonotuck, Holyoke, Mass., on Wednesday, March 19. The subject which Mr. Burke will discuss will be "The Past, Present and Future of the Cost Association."

Dinner will be served at 6:30 p.m., and those desiring reservations should notify Paul A. Wilkes, care Strathmore Paper Company, Mittineague, Mass., so that adequate arrangements can be made with the hotel.

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, March 12, 1930.

BLANC FIXE.—Trading in the blanc fixe market was fairly active. The contract movement was well up to average. Prices are unchanged. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is practically unchanged. Demand is moderately active and shipments against contract are moving at a normal pace. Prices are generally holding to schedule. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in drums, at works.

CASEIN.—Argentine casein was somewhat weaker than of late. The standard ground is now quoted at from 14 cents to 14½ cents per pound and finely ground at from 14½ cents to 15 cents. Domestic casein is still selling at from 14 cents to 16½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Conditions in the caustic soda market are fairly satisfactory. Contract shipments are going forward in seasonal volume. Solid caustic soda is still quoted at from $2.90 to $2.95, and the flake and the ground at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Demand for china clay is persistent. Shipments against contract are moving at a steady pace. Prices remain unchanged. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—The chlorine market was moderately active during the past week. Supplies continue to move into consumption in satisfactory volume. Prices remain unchanged. Chlorine is quoted at $2.50 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—Business in the rosin market was quiet. Prices declined slightly. The grades of gum rosin used in the paper mills are quoted at from $7.85 to $8.45 per 280 pounds, in barrels, on dock. Wood rosin is selling at from $6.00 to $6.50 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—The undertone of the salt cake market continues strong. Shipments against contract are moving in excellent volume. Prices rule steady to firm. Salt cake is quoted at from $22 to $25 per ton, while chrome salt cake is selling at from $20 to $21 per ton, in bulk, at works.

SODA ASH.—Most of the business transacted in the soda ash market was along routine lines. Contract shipments continue to move at a normal pace. Prices are holding to schedule. Contract quotations on soda ash, in car lots, at works, are as follows: in bags, $1.32½; and in barrels, $1.55.

STARCH.—Offerings of starch are sufficient to take care of current requirements. Shipments are going forward with regularity. No further price changes have been recorded. Special paper making starch is quoted at $3.72 per 100 pounds, in bags, and at $3.99 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Paper mill demand for sulphate of alumina is fairly persistent. The contract movement is satisfactory. Prices remain unchanged. Commercial grades are quoted at from $1.40 to $1.55 and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—Steadiness prevails in the sulphur market. Prices remain unchanged. Sulphur is quoted at $18 per ton, at mine, for orders of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—The talc market is in a sound position. Contract shipments are moving in seasonal volume. Prices are holding to schedule. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper
(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@53.25
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
Book, Cased—		
S. & S. C.	6.00 @	7.50
M. F.	5.75 @	7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75 @	1.00
Anti-Tarnish	1.35 @	1.90
Colored	1.00 @	2.00
White No. 2	.75 @	.80
Kraft	1.00 @	1.10
Manila	.75 @	.80
Kraft—		
No. 1 Domestic	6.00 @	6.50
No. 2 Domestic	3.87½ @	5.00
Southern	3.75 @	4.50
Imported	6.50 @	7.00
Manila—		
No. 1 Jute	9.00 @	9.25
No. 2 Jute	7.75 @	8.50
No. 1 Wood	4.75 @	5.25
No. 2 Wood	4.00 @	4.50
Butchers	3.75 @	4.25
Fibre Papers—		
No. 1 Fibre	5.00 @	5.50
No. 2 Fibre	4.75 @	5.25
Common Bogus	2.75 @	3.00
Screenings	3.00 @	3.25
Card Middles	4.00 @	5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

News, per ton—		
Rolls, contract	62.00 @	—
Rolls, spot	62.00 @	—
Sheets	67.00 @	—
Side Runs	47.00	@52.00
Boards—per ton—		
News	37.50 @	—
Straw	52.50 @	—
Chip	35.00 @	—
Binders' Boards	65.00	@70.00
Wood Pulp	90.00	@95.00
65 Test Jute Liner	45.00	@47.50
85 Test Jute Liner	50.00	@55.00
Sgl. Mla. Ll. Chip	47.50	@50.00

Mechanical Pulp
(On Dock)

No. 1 Imported—		
Moist	30.00	@32.00
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	28.00	@32.00
Screenings	15.00	@20.00

Chemical Pulp
(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.25 @	4.25
Easy Bleaching	2.80 @	3.05
No. 1 strong unbleached	2.65 @	2.75
Mitscherlich unbleached	2.70 @	3.00
No. 2 strong unbleached	2.40 @	2.60
No. 1 Kraft	2.30 @	2.50
No. 2 Kraft	2.25 @	2.40
Sulphate—		
Bleached	3.40 @	3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.20 @	4.75
Easy Bleaching Sulphite	2.65 @	3.00
News Sulphite	2.50 @	2.70
Mitscherlich	3.00 @	3.25
Kraft (Domestic)	2.10 @	3.30
Soda Bleached	3.10 @	3.25
Sulphate Screenings—		
Coarse	.75 @	.95
Refined	1.65 @	1.85

Domestic Rags
New Rags
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	9.50 @	10.50
New White, No. 2	7.50 @	8.00
Silesias No. 1	7.50 @	8.00
New Unbleached	10.50	@11.00
New Blue Prints	5.25 @	5.50
New Soft Blacks	5.25 @	5.75
Blue Overall	7.25 @	7.75
Washables	4.75 @	5.25
Fancy	5.50 @	6.00
Mixed Khaki Cuttings	4.75 @	5.25
Pink Corset Cuttings	8.00 @	8.50
O. D. Khaki Cuttings	5.15 @	5.75
Men's Corduroy	3.75 @	4.25
New Mixed Blacks	3.50 @	3.75

Old Rags

White, No. 1—		
Repacked	5.50 @	6.00
Miscellaneous	4.50 @	5.00
White, No. 2—		
Repacked	3.00 @	3.50
Miscellaneous	2.50 @	2.75
St. Soiled, White	2.00 @	2.15
Thirds and Blues—		
Repacked	2.25 @	2.50
Miscellaneous	1.75 @	2.00
Black Stockings	3.25 @	3.75
Roofing Rags—		
Cloth Strippings	1.70 @	1.80
No. 1	1.70 @	1.80
No. 2	1.55 @	1.65
No. 3	1.30 @	1.40
No. 4	1.25 @	1.35
No. 5A	.90 @	1.00

Foreign Rags
New Rags

New Dark Cuttings	2.50 @	3.00
New Mixed Cuttings	2.75 @	3.25
New Light Silesias	7.00 @	7.50
Light Flannelettes	7.50 @	8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.00	@10.50
New Light Oxfords	7.00 @	7.50
New Light Prints	5.50 @	6.50

Old Rags

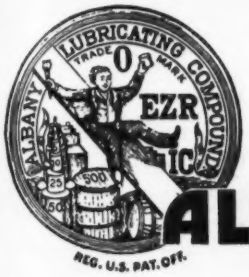
No. 1 White Linens	7.25 @	8.00
No. 2 White Linens	5.75 @	6.75
No. 3 White Linens	4.75 @	5.25
No. 4 White Linens	3.00 @	3.50
No. 1 White Cotton	5.50 @	6.50
No. 2 White Cotton	4.50 @	5.50
No. 3 White Cotton	3.00 @	4.00
No. 4 White Cotton	2.00 @	2.10
Extra Light Prints	2.75 @	3.25
Ord. Light Prints	2.25 @	2.50
Med. Light Prints	1.95 @	2.10
Dutch Blue Cottons	2.20 @	2.35
French Blue Linens	2.75 @	2.85
German Blue Linens	2.35 @	2.55
German Blue Cottons	2.10 @	2.20
Checks and Blues	1.85 @	2.00
Lindsay Garments	1.85 @	1.95
Dark Cottons	1.50 @	1.55
Old Shopperies	1.45 @	1.50
New Shopperies	1.40 @	1.45
French Blues	2.10 @	2.25

Old Rope and Bagging
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.50 @	1.60
Domestic	1.60 @	1.70
Wool Tares, light	1.60 @	1.65
Wool Tares, Heavy	1.60 @	1.70
Bright Bagging	1.60 @	1.70
Small Mixed Rope	1.25 @	1.40
Manila Rope—		
Foreign	4.25 @	4.40
Domestic	4.25 @	4.50
New Burlap Cut	2.75 @	3.00
Hessian Jute Threads—		
Foreign	3.50 @	4.00
Domestic	3.25 @	3.50

Old Waste Papers
(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.00 @	3.25
Hard, white, No. 2	2.40 @	2.55
Soft, White, No. 1	2.40 @	2.55
White envelope cuttings	2.90 @	3.10
Flat Stock—		
Stitchless	1.45 @	1.55
Overissue Mag.	1.45 @	1.55
Solid Flat Book	1.40 @	1.50
Crumpled No. 1	1.00 @	1.10
Solid Book Ledger	2.00 @	2.10
Ledger Stock	1.40 @	1.50
New B. B. Chips	.45 @	.55
Manilas—		
New Env. Cut	2.40 @	2.60
New Cuttings	1.50 @	1.75
Extra No. 1 old	1.25 @	1.35
Print	.60 @	.65
Container	.40 @	.50
Bogus Wrapper	.60c @	.65
Old Kraft Machine Compressed bales	1.65 @	1.75
News—		
No. 1 White News	1.65 @	1.75
Strictly Overissue	.55 @	.65
Strictly Folded	.45 @	.55
No. 1 Mixed Paper	.25 @	.30
Common Paper	.15 @	.65



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Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	4.25	@	4.50
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.35	@	2.40
White Env. Cuttings	2.60	@	2.65
No. 1 Soft Shavings	2.10	@	2.15
No. 1 Mixed	.60	@	.70
No. 2 Mixed	.50	@	.60
Ledger & Writings	1.25	@	1.35
Solid Books	1.05	@	1.10
Blanks	1.60	@	1.65
Krafts	1.65	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.75	@	1.80
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.60	@	.70
Folded News (over-issue	.50	@	.60
Old Newspapers—			
No. 1	.60	@	.65
No. 2	.50	@	.55
Mixed Papers—			
No. 1	.45	@	.50
Roonng Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.05	@	.40
Ledgers	.08	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.09	@	.20
Book, M. F.	.05	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.09	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.07	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 2 Kraft	.04¼	@	.05
No. 1 Kraft	.05	@	.06
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	70.00
News Board	37.50	@	38.50
Chip Board	32.50	@	35.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	07¼
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.0
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05½	@	.06
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.80	@	1.90
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.30	@	1.40
No. 1 Books, heavy	1.25	@	1.35
No. 2 Books, light	.90	@	1.00
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.40	@	.50
Container Manila	.25	@	.35
Old Kraft	1.60	@	1.70
Common paper	.15	@	.20
No. 1 Mixed Paper	.15	@	.20
Straw Board, Chip	.40	@	.50
Binders Board, Chip	.35	@	.45
Overissue News	.60	@	.70
Old Newspaper	.25	@	.30

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
M. G.	7.00	@	—
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12½
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.03¾	@	.05
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls .009			52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated Newsboard Bender	65.00	@	80.00
Wood Pulp Board	75.00	@	80.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.40	@	2.50
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.60	@	1.70
Old Kraft	—	@	1.50
Print Manila	.80	@	.90
No. 1 Mixed Paper	—	@	.27½
Overissue News	.45	@	.55
Old Newspapers	.45	@	.50
Box Board, Chip	.45	@	.50
Repacked	.01½	@	.01⅝
No. 2	1.20	@	1.25
No. 3 (Roofing)	1.10	@	1.20
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.40	@	1.55
Manila Rope—			
Foreign	—	@	4.40
Domestic	—	@	4.50
Transmission Rope	—	@	2.75
Mixed Strings	.90	@	1.00
Jute Wool Strings	1.00	@	1.05
Jute Carpet Threads	1.05	@	1.15
Scrap Burlaps	—	@	1.35
Scrap Sisal	1.55	@	1.75
Scrap Sisal for shredding	1.75	@	2.00
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	3.00	@	3.13½

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.08½	@	—
Silesias No. 1	.06	@	.06¼
New Unbleached	.09¾	@	—
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04½
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03¼
New Canvas	.08	@	.08¼

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.40	@	1.50
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	1.45	@	1.50
New No. 1 Shirt Cuttings	9.00	@	9.50
Dutch Blues	2.00	@	2.12½
Lace Curtains	4.75	@	5.00
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	2.00
Old Linsey Garments	1.80	@	1.85

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
White, No. 2	2.00	@	2.25

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	31.00	@	32.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	77.00	@	78.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09¼	@	.10
Fancy Shirt Cuttings	.06	@	.06¼

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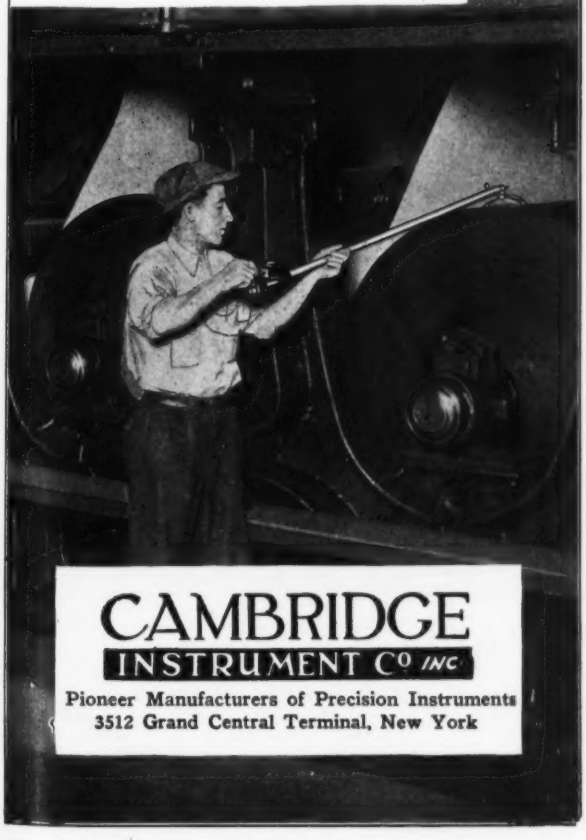

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PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. XC, No. 12 — Thursday, March 20, 1930

Paper Production Shows Big Increase

According to Identical Mill Reports to the American Paper and Pulp Association from Members and Cooperating Organizations Gain of 16 Per Cent for January as Compared with December Is Indicated—Pulp Production, However, for January As Compared With December Shows A Decrease of 2 Per Cent.

According to identical mill reports to the American Paper and Pulp Association from members and cooperating organizations, paper production in January showed an increase of 16 per cent over December, 1929, and a decrease of 1 per cent under January, 1929.

The Production in January

The January production of paper board, wrapping, bag and building papers, registered a decrease under January, 1929, output. Uncoated book paper production showed an increase of 15 per cent, writing 7 per cent, hanging 3 per cent, tissue 2 per cent, and news print 1 per cent over January, 1929. Production of wrapping paper decreased in January, 1930, as compared with January, 1929, by 17 per cent, bag paper 9 per cent, paper board 3 per cent, and building paper 1 per cent.

Shipments in January, 1930, of wrapping, building, hanging, paper board, and bag papers, increased over January, 1929, the total shipments being 1 per cent below the total of 1929.

News Print Decreases

News print, wrapping, writing and tissue papers registered decreases in inventory at the end of January, 1930, as compared with the end of December, 1929. As compared with January, 1929, inventory, news print, wrapping, bag, and tissue papers showed decreases. The total stocks on hand for all grades was 2 per cent above December, 1929, and 3 per cent below that of January, 1929.

Identical pulp mill reports for January, 1930, indicated that the total production of all grades of pulp was 2 per cent less than January, 1929.

More Bleached Sulphite Consumed

During January, 1930, 18 per cent more mitscherlich sulphite, 9 per cent more bleached sulphite, and 7 per cent more soda pulp was consumed by reporting mills than in January, 1929. The total shipments to outside markets of all grades of pulp in January, 1930, were 5 per cent below the total for January, 1929.

Drop in Pulp Grades

All grades of pulp, excepting bleached sulphite, easy bleaching sulphite and kraft, showed decreases in inventory at the end of January as compared with the end of December, 1929. As compared with January, 1929, all grades, excepting bleached sulphite, easy bleaching sulphite and kraft pulp, registered decreases in inventory.

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF JANUARY, 1930

Grade	Production tons	Shipments tons	Stocks on hand end of month tons
News print	124,851	124,262	18,778
Book (uncoated)	96,642	94,655	45,221
Paper board	217,563	215,257	64,288
Wrapping	48,275	49,078	47,091
Bag	14,546	14,406	6,201
Writing	32,587	33,271	42,619
Tissue	12,820	13,089	8,506
Hanging	6,188	5,986	3,824
Felts and building	5,724	4,600	4,262
Other Grades	24,459	23,379	18,939
Total—All Grades	583,655	577,983	259,729

REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF JANUARY, 1930

Grade	Production tons	Used during month tons	Shipped during month tons	Stocks on hand end of month tons
Ground wood	92,701	91,116	2,808	42,709
Sulphite, News Grade	38,521	35,695	3,432	6,247
Sulphite, Bleached	29,442	26,810	2,316	3,471
Sulphite, Easy Bleaching	3,622	3,149	434	1,100
Sulphite, Mitscherlich	7,153	6,502	972	843
Kraft Pulp	29,189	24,851	4,195	6,378
Soda Pulp	25,576	16,612	9,072	3,452
Pulp—Other Grades	48	.....	67	3
Total—All Grades	226,252	204,735	23,296	64,203

Fir-Tex to Open Early in July

The Fir-Tex Insulating Board Company plant which is now under construction at St. Helens, Ore., as one of the major developments on the coast this year, will be opened July 4 according to present plans, with operation to get under way shortly thereafter.

This plant will occupy approximately 132,000 square feet of floor space with a total of 111,300 square feet of ground space, some of the buildings being two stories in height. These figures include the dock and runway space leading from the dock to the digester buildings. Some of the buildings are already prepared for occupancy and work of installing machinery is under way.

The digester building is two stories, 46 by 158 feet; the shredder building, two stories, 39 by 170; machine building, two stories, 47 by 144; dryer building, 47 by 512; retort building, 36 by 272; finishing room, 64 by 94; board storage, 90 by 300; boiler house, 44 by 84; laboratory, two stories, 48 by 128; pump house, 16 by 32; garage, ten-car capacity, 36 by 50 feet. The dock is 48 by 200 feet with a runway 800 feet long leading to the digester. Included in the property of the plant is a dock 1800 feet long.

Hamlin F. McCormick of St. Helens is president of the Fir-Tex Company and Charles E. Dant of Dant & Russell is chairman of the board of directors.

Advertising matter paged consecutively with text, has been removed here to lessen the bulk of this volume.